AD-A032 843 AIR FORCE OCCUPATIONAL MEASUREMENT CENTER LACKLAND A--ETC F/G 5/9
ELECTRONICS PRINCIPLES PRECISION MEASURING EQUIPMENT CAREER LAD--ETC(U)
NOV 76

UNCLASSIFIED AFPT-90-324-222 NL

1 OF 3
AD
A032 843

AD A032843

(9) (2)

OCCUPATIONAL SURVEY REPORT

(6) ELECTRONICS PRINCIPLES
PRECISION MEASURING EQUIPMENT
CAREER LADDER
AFSCs 32430, 32450, 32470, AND 32490

(12) 119 p.

(14) AFPT-90-324-222

(11) 5 NOVEMBER 1976

OCCUPATIONAL SURVEY BRANCH
USAF OCCUPATIONAL MEASUREMENT CENTER
LACKLAND AFB TEXAS 78236

DDC
RECEIVED
DEC 2 1976
A

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

408 889

COPY AVAILABLE TO DDC DOES NOT
PERMIT FULLY LEGIBLE PRODUCTION

TABLE OF CONTENTS

	PAGE NUMBER
PREFACE	2
INTRODUCTION	3
DEVELOPMENT OF THE ELECTRONICS PRINCIPLES INVENTORY (EPI)	3
ADMINISTRATION	4
RESULTS	4
READING THE COMPUTER PRINTOUTS	7
APPENDIX	8

ACCESSION for
NTIS White Section
DDC Buff Section
UNANNOUNCED
JUSTIFICATION
BY
DISTRIBUTION/AVAILABILITY CODES
Dist. AVAIL. and/or SPECIAL
A

PREFACE

This report presents a summary of the results of a detailed Air Force Electronics Principles survey of the Precision Measuring Equipment career ladder, AFSCs 32430, 32450, 32470, and 32490.

The Electronics Principles Inventory (EPI) was developed by Major Thomas J. O'Connor and Mr. Hendrick W. Ruck and the survey data were analyzed by Major O'Connor and Mr. Guy B. Cole. All are members of the Occupational Survey Branch, USAF Occupational Measurement Center, Lackland AFB, Texas.

Computer programs for analyzing the data were designed by Dr. Raymond E. Christal, Occupational and Manpower Research Division, Air Force Human Resources Laboratory (AFHRL), and were written by the Project Analysis and Programming Branch, Computational Sciences Division, AFHRL.

Distribution of this report is made upon request to the USAF Occupational Measurement Center, attention of the Chief, Occupational Survey Branch (OMY), Lackland AFB, Texas 78236.

This report has been reviewed and is approved.

JAMES A. TURNER, JR., Colonel, USAF
Commander
USAF Occupational Measurement Center

WALTER E. DRISKILL, Ph.D.
Chief, Occupational Survey Branch
USAF Occupational Measurement Center

ELECTRONICS PRINCIPLES OCCUPATIONAL SURVEY REPORT
PRECISION MEASURING EQUIPMENT CAREER LADDER
AFSC 324X0

INTRODUCTION

This report summarizes the results of a comprehensive survey of Electronics Principles used by personnel in the Precision Measuring Equipment career ladder. The survey was directed by HQ ATC/TT in a letter dated 11 February 1975. In that letter, Major General C. G. Cleveland, then DCS/TT, asked the USAF Occupational Measurement Center to review the job utilization of basic electronics training. The Precision Measuring Equipment career ladder was selected as one of the first ladders to be surveyed after consultation with HQ ATC personnel.

This report presents a summary of: (1) the development of the Electronics Principles Inventory (EPI) used to collect the data; (2) the administration of the EPI to AFSC 324X0 job incumbents; and (3) data resulting from this survey.

DEVELOPMENT OF THE ELECTRONICS PRINCIPLES INVENTORY (EPI)

Creation of the EPI required a lengthy process of development and review. A chronological description of the process will not be undertaken in this report; however, the highlights of the process will be presented.

Personnel from the Occupational Survey Branch working on the project were well qualified in theoretical physics and electronics as well as having expertise in task analysis and survey development. Over 300 maintenance personnel from SAC, TAC, ADC, MAC, and AFCS participated in the development of the inventory. Electronics experts from the five ATC training centers, who averaged 12 years of maintenance experience and four years of electronics principles instruction experience, spent several weeks refining the EPI after it had been developed.

In addition, personnel at the Electrical Engineering Department of the USAF Academy and the Air Force Human Resources Laboratory were consulted on the EPI during its development.

The EPI used in this survey contained 1,257 items in 62 subject matter areas covering all electronics principles training given at the five ATC technical training centers.

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

ADMINISTRATION

The EPI was administered in person and by mail to 768 airmen worldwide. This total represents approximately 36 percent of all airmen assigned to the Precision Measuring Equipment career ladder and included responses from personnel in all commands using such personnel. Seventy-six percent of the personnel surveyed in the sample were assigned to CONUS organizations and 24 percent were assigned overseas. Grade levels of respondents ranged from E3 through E9, with the mean grade being E5.

RESULTS

Airmen in this career ladder employ a wide variety of electronics principles in their jobs as evidenced by an average of 400 "Yes" responses to the 1,257 electronics principles items. Within 35 of the 62 subject areas, 50 percent or more of the survey respondents marked at least one item "Yes" (Table 1). These subject areas contain electronics principles which are important in the performance of Precision Measuring Equipment career ladder jobs. Within 17 of the 62 subject areas, 21 to 49 percent of the respondents marked at least one item "Yes" (Table 2). Within the 10 remaining subject areas, 20 percent or less of the survey respondents indicated a "Yes" response to at least one item (Table 3).

The data which reflect the percent of various groups of incumbents answering "Yes" to each item of the EPI are presented in the appendix to this report. Group Summary One (GPSUM1) shows performance data for the total sample and each Duty Air Force Specialty Code (DAFSC) Group. Group Summary Two (GPSUM2) shows performance data for personnel groups based on their time in military service.

It is hoped that a careful review of each item will determine its applicability to training and job utilization. In addition to the identification of overtraining in certain electronics areas, it may be found for some AFSCs that undertraining exists. That is, the data may show a relatively large percent of members using or referring to certain electronics items, when in fact the ATC school may give little or no emphasis in that area. The data presented in this report can be used for designing basic electronics principles course charts, outlines, objectives, tests, and various other elements associated with the basic electronics principles training.

It must be stressed that the survey items used in this report do not necessarily represent the items taught in any one ATC basic electronics course. Instead, they represent a consolidation of electronics principles taught at the five Technical Training Centers.

TABLE 1

THIRTY-FIVE SUBJECT AREAS WITH HIGH JOB UTILIZATION OF BASIC ELECTRONICS. THAT IS, 50 PERCENT OR MORE OF THE SURVEY SAMPLE RESPONDED "YES" TO ONE OR MORE QUESTIONS WITHIN EACH AREA.

MATHEMATICS
DIRECT CURRENT AND VOLTAGE
RESISTANCE
MULTIMETER USES
ALTERNATING CURRENT
INDUCTORS AND INDUCTIVE REACTANCE
CAPACITORS AND CAPACITIVE REACTANCE
TRANSFORMERS
MAGNETISM
RCL CIRCUITS
FILTERS
COUPLING
SOLDERING
RELAYS
OSCILLOSCOPES
SEMICONDUCTOR DIODES
TRANSISTORS
TRANSISTOR AMPLIFIERS
SOLID STATE SPECIAL PURPOSE DEVICES
POWER SUPPLIES
OSCILLATORS
MULTIVIBRATORS
LIMITERS AND CLAMPERS
ELECTRON TUBES
ELECTRON TUBE AMPLIFIERS AND CIRCUITS
SPECIAL PURPOSE ELECTRON TUBES
COUNTERS
TIMING CIRCUITS
USE OF SIGNAL GENERATORS
METER MOVEMENTS
WAVESHAPING CIRCUITS
SCHMITT TRIGGERS
CABLE FABRICATION
INPUT/OUTPUT DEVICES
DB AND POWER RATIOS

TABLE 2

SEVENTEEN SUBJECT AREAS WITH MODERATE JOB UTILIZATION OF BASIC ELECTRONICS. THAT IS, 21 TO 49 PERCENT OF THE SURVEY SAMPLE RESPONDED "YES" TO ONE OR MORE QUESTIONS WITHIN EACH AREA.

SERIES AND PARALLEL RESONANCE
HETERODYNING, MODULATION, AND DEMODULATION
AM SYSTEMS
FM SYSTEMS
NUMBERING SYSTEMS
LOGIC FUNCTIONS
BOOLEAN EQUATIONS
MOTORS AND GENERATORS
PULSE MODULATION SYSTEMS
WAVEGUIDES AND CAVITY RESONATORS
MICROWAVE AMPLIFIERS AND OSCILLATORS
REGISTERS
STORAGE DEVICES
DIGITAL TO ANALOG CONVERTERS
PHANTASTRONS
PHOTOSENSITIVE DEVICES
SYNCHRONOUS VIBRATIONS

TABLE 3

TEN AREAS WITH LOW JOB UTILIZATION OF BASIC ELECTRONICS. THAT IS, 20 PERCENT OR LESS OF THE SURVEY SAMPLE RESPONDED "YES" TO ANY QUESTION WITHIN EACH AREA.

- LASERS
- INFRARED
- PROGRAMMING
- SINGLE SIDEBAND SYSTEMS
- SATURABLE REACTORS AND MAGNETIC AMPLIFIERS
- ANTENNAS
- MICROPHONES
- DISPLAY TUBES
- TRANSMISSION LINES
- SPEAKERS

READING THE COMPUTER PRINTOUTS (GPSUM1, GPSUM2, AND JOBINV) WHICH ARE IN THE APPENDIX

GPSUM1 is a summary which gives the percent of members of a group which responded "Yes" to the items in the survey booklet. At the top of each column of numbers on any page of GPSUM1 are the following Group Identifiers and Groups:

SPC001 - All airmen in Career Ladder 324X0 sample (768 persons)
SPC002 - All airmen DAFSC 32430 (14 persons)
SPC003 - All airmen DAFSC 32450 (386 persons)
SPC004 - All airmen DAFSC 32470 (311 persons)
SPC005 - All airmen DAFSC 32490 (57 persons)

GPSUM2 is a summary which gives the percent of members of a group which responded "Yes" to the items in the survey booklet. At the top of each column of numbers on any page of GPSUM2 are the following Group Identifiers and Groups:

SPC006 - All airmen 6-24 months in Career Field (92 persons)
SPC007 - All airmen 25-48 months in Career Field (278 persons)
SPC008 - All airmen 1-48 months in Career Field (374 persons)
SPC009 - All airmen 49-96 months in Career Field (153 persons)
SPC010 - All airmen 97-144 months in Career Field (148 persons)
SPC011 - All airmen 145-192 months in Career Field (61 persons)
SPC012 - All airmen 193+ months in Career Field (33 persons)

To conserve space, some of the items have been abbreviated in GPSUM1 and GPSUM2 in the Appendix. Each item has been listed in its entirety in the Job Inventory (JOBINV) beginning on page 92 of the Appendix. For example, Task A-1, page 4, GPSUM1, is incomplete. In order to find the complete statement, turn to page 92 of the Appendix and read item A-1.

APPENDIX

SEE PAGE 1 OF THE APPENDIX WHICH GIVES THE TABLE OF CONTENTS WHICH INCLUDES THE APPROPRIATE PAGES FOR GPSUM1, GPSUM2, AND THE COMPLETE ELECTRONICS PRINCIPLES ITEMS CONTAINED IN JOBINV.

APPENDIX

TABLE OF CONTENTS TOC PAGE 1

AF HUMAN RESOURCES LABORATORY
AIR FORCE SYSTEMS COMMAND

REPORT NUMBER	REPORT ID	REPORT TITLE	PAGE NUMBER
1	TOC	TABLE OF CONTENTS	1
2	GPSUM1	PERCENT MEMBERS PERFRMNG TASKS BY DAFSC GROUPS	2
3	GPSUM2	PERCENT MEMBERS PERFORMING TASKS BY AFMS GROUPS	47
4	JOBINV	JOB INVENTORY(DUTY/TASK TITLES)	92

AF HUMAN RESOURCES LABORATORY
AIR FORCE SYSTEMS COMMAND

TABULATION OF PERCENT MEMBERS PERFORMING DUTIES AND TASKS BY DAFSC GROUPS IN THE 324X0 CAREER FIELD.

REPORTS ON THE FOLLOWING GROUPS WERE REQUESTED

GROUP IDENTITY =	SPC001	ALL AIRMEN IN CAREER LADDER 324X0 SAMPLE	CONTAINING	768 MEMBERS.
GROUP IDENTITY =	SPC002	ALL AIRMEN DAFSC 32430	CONTAINING	14 MEMBERS.
GROUP IDENTITY =	SPC003	ALL AIRMEN DAFSC 32450	CONTAINING	386 MEMBERS.
GROUP IDENTITY =	SPC004	ALL AIRMEN DAFSC 32470	CONTAINING	311 MEMBERS.
GROUP IDENTITY =	SPC005	ALL AIRMEN DAFSC 32490	CONTAINING	57 MEMBERS.

DUTY GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DUTY	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005
A	MATHEMATICS, DIRECT CURRENT, VOLTAGE, AND RESISTANCE	99	100	100	99	93
B	MULTIMETER USES, ALTERNATING CURRENT, INDUCTORS, AND INDUCTIVE	99	100	99	99	98
C	CAPACITORS, CAPACITIVE REACTANCE, TRANSFORMERS, AND MAGNETISM	93	100	97	93	67
D	RCL CIRCUITS, SERIES AND PARALLEL RESONANCE (TIME CONSTANTS), AND FILTERS	79	79	83	79	46
E	COUPLING, SOLDERING, AND RELAYS	88	100	96	85	51
F	MICROPHONES, SPEAKERS, AND OSCILLOSCOPES	88	93	93	88	42
G	SEMICONDUCTOR DIODES, TRANSISTORS, AND TRANSISTOR AMPLIFIERS	87	100	95	85	39
H	SOLID STATE SPECIAL PURPOSE DEVICES, POWER SUPPLIES, AND OSCILLATORS	94	100	96	94	79
I	MULTIVIBRATORS, LIMITERS, CLAMPERS, AND ELECTRON TUBES	85	100	93	83	39
J	ELECTRON TUBE AMPLIFIERS AND CIRCUITS, SPECIAL PURPOSE ELECTRON TUBES, HETERODYNING, MODULATION,	82	86	89	81	49
K	AM SYSTEMS, FM SYSTEMS, AND NUMBERING SYSTEMS	53	43	53	57	30
L	LOGIC FUNCTIONS, BOOLEAN EQUATIONS, AND COUNTERS	65	43	68	66	39
M	TIMING CIRCUITS, USE OF SIGNAL GENERATORS, MOTORS, AND GENERATORS	90	93	90	92	75
N	METER MOVEMENTS, SATURABLE REACTORS, MAGNETIC AMPLIFIERS, AND WAVESHAPING CIRCUITS	84	93	91	84	39
O	SINGLE SIDEBAND SYSTEMS, PULSE MODULATION SYSTEMS, AND ANTENNAS	37	14	38	40	23
P	TRANSMISSION LINES, WAVEGUIDES AND CAVITY RESONATORS, AND MICROWAVE AMPLIFIERS AND OSCILLATORS	44	21	41	51	28
Q	REGISTERS, STORAGE DEVICES, AND DIGITAL TO ANALOG CONVERTERS	47	36	46	49	42
R	PHANTASTRONS, SCHMITT TRIGGERS, AND CABLE FABRICATION	72	64	76	74	35
S	INPUT\OUTPUT DEVICES, PHOTO SENSITIVE DEVICES, AND SYNCHRONOUS VIBRATIONS	67	79	73	67	30
T	INFRARED, LASERS, AND DISPLAY TUBES	14	0	16	13	7
U	PROGRAMMING, DB AND POWER RATIOS	78	64	79	80	61

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	
A	1	A1-01 DO YOU USE AN INSTRUMENT, SUCH AS METER OR AN OSCILLOSCOPE, IN WHICH IT IS NECESSARY TO AMPLIFY OR	84	93	89	85	35	
A	2	A1-02 DO YOU USE A PUBLICATION, SUCH AS A TECHNICAL ORDER OR MAINTENANCE MANUAL, IN WHICH IT IS NECESSARY	74	71	74	79	46	MATHEMATICS
A	3	A1-03 DO YOU REARRANGE AND SOLVE FORMULAS OR EQUATIONS.	82	64	86	84	54	
A	4	A1-04 DO YOU FIND THE SQUARE ROOT OF A QUANTITY.	62	29	64	65	47	
A	5	A1-05 DO YOU SOLVE FOR AN UNKNOWN QUANTITY.	75	64	77	77	58	
A	6	A1-06 DO YOU CONVERT NUMBERS TO LOGARITHMS.	46	43	42	53	37	
A	7	A1-07 DO YOU USE LOGARITHM TABLES IN ANY TYPE OF CALCULATIONS.	49	43	46	56	35	
A	8	A1-08 DO YOU SOLVE QUADRATIC EQUATIONS.	23	7	27	22	16	
A	9	A1-09 DO YOU USE THE NATURAL SYSTEM OF LOGARITHMS (THIS IS THE LOGARITHM SYSTEM WHICH USES THE NUMBER 2.718 AS	15	21	17	15	7	
A	10	A1-10 DO YOU WORK WITH VECTOR QUANTITIES, SUCH AS ADDING OR SUBTRACTING TWO VECTORS.	30	29	31	30	25	
A	11	A1-11 DO YOU WORK WITH TRIGONOMETRIC FUNCTIONS SUCH AS SINE, COSINE, OR TANGENT.	56	43	55	60	40	
A	12	A1-12 DO YOU DETERMINE AREAS OF PLANE FIGURES, SUCH AS AREAS OF CIRCLES OR TRIANGLES.	21	7	19	23	19	
A	13	A1-13 DO YOU SOLVE OR USE SIMULTANEOUS EQUATIONS.	21	29	23	20	12	
A	14	A1-14 DO YOU SOLVE OR USE PROPORTIONS.	68	64	69	72	44	
A	15	A2-01 DO YOU USE THE TERM VOLTAGE OR VOLT.	96	100	98	95	93	
A	16	A2-02 DO YOU USE THE TERM ELECTROMOTIVE FORCE (EMF).	58	93	58	56	65	
A	17	A2-03 DO YOU USE THE TERM OHM.	96	100	97	94	93	
A	18	A2-04 DO YOU USE THE TERM ION.	36	0	28	43	56	
A	19	A2-05 DO YOU USE THE TERM DYNE.	20	7	17	20	35	DIRECT CURRENT AND VOLTAGE
A	20	A2-06 DO YOU USE THE TERM AMPERE.	93	86	95	92	91	
A	21	A2-07 DO YOU USE THE TERM NEUTRON.	24	7	22	27	33	
A	22	A2-08 DO YOU USE THE TERM COULOMB.	21	21	20	21	26	
A	23	A2-09 DO YOU USE THE TERM PROTON.	24	7	22	27	30	
A	24	A3-01 DO YOU WORK WITH RESISTORS IN YOUR PRESENT JOB.	76	71	87	71	35	
A	25	A3-02 DO YOU INSPECT RESISTORS.	83	100	91	81	39	
A	26	A3-03 DO YOU CLEAN RESISTORS.	68	79	77	64	19	
A	27	A3-04 DO YOU ADJUST RESISTORS.	83	100	91	81	35	RESISTANCE
A	28	A3-05 DO YOU CHECK OHMIC VALUE OF RESISTORS.	86	100	95	84	39	
A	29	A3-06 DO YOU REMOVE OR REPLACE RESISTORS.	81	100	92	77	28	
A	30	A3-07 DO YOU USE OR REFER TO TEMPERATURE COEFFICIENTS FOR RESISTORS ON ANY TASKS IN YOUR PRESENT JOB.	44	50	48	43	23	
A	31	A3-08 DO YOU USE OR REFER TO RESISTOR SYMBOLS, SUCH AS FOR FIXED RESISTORS OR FOR TAPPED RESISTORS.	87	100	94	86	44	
A	32	A3-09 DO YOU IDENTIFY OR CLASSIFY THE RESISTORS YOU WORK WITH AS CARBON, FIXED WIRE, SLIDE TAP, RHEOSTAT OR	87	93	94	85	47	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		Dy-TSk	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	
A	33	A3-10 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE THE OHMIC VALUE OF RESISTANCE.	87	100	94	86	44	
A	34	A3-11 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE THE TOLERANCE OF RESISTORS.	85	100	92	84	44	
A	35	A3-12 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE THE FAILURE RATE OF RESISTORS.	15	21	19	12	9	
A	36	A3-13 DO YOU MAKE DECISIONS IN WHICH YOU MUST DETERMINE HOW TWO OR MORE BATTERIES MUST BE CONNECTED TOGETHER TO	64	79	67	65	33	
A	37	A3-14 DO YOU USE OR REFER TO THE SCHEMATIC SYMBOLS WHICH REPRESENT ANY OF THE FOLLOWING COMPONENTS: BATTERY,	88	100	95	87	46	
A	38	A3-15 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES RESISTIVE CIRCUITS.	77	93	82	76	40	
A	39	A3-16 DO YOU CALCULATE TOTAL CURRENT FOR SERIES RESISTIVE CIRCUITS.	67	93	70	68	39	
A	40	A3-17 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES RESISTIVE CIRCUITS.	71	93	75	72	39	
A	41	A3-18 DO YOU CALCULATE POWER DISSIPATION FOR SERIES RESISTIVE CIRCUITS.	57	64	60	57	33	
A	42	A3-19 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES PARALLEL RESISTIVE CIRCUITS.	71	93	76	70	39	
A	43	A3-20 DO YOU CALCULATE TOTAL CURRENT FOR SERIES PARALLEL RESISTIVE CIRCUITS.	62	86	65	63	35	
A	44	A3-21 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES PARALLEL RESISTIVE CIRCUITS.	65	93	69	66	35	
A	45	A3-22 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR SERIES PARALLEL RESISTIVE CIRCUITS.	58	79	61	58	33	
A	46	A3-23 DO YOU CALCULATE POWER DISSIPATION FOR SERIES PARALLEL RESISTIVE CIRCUITS.	52	50	54	52	30	
A	47	A3-24 DO YOU CALCULATE TOTAL RESISTANCE FOR PARALLEL RESISTIVE CIRCUITS.	72	93	76	72	40	
A	48	A3-25 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RESISTIVE CIRCUITS.	62	86	64	63	37	
A	49	A3-26 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR PARALLEL RESISTIVE CIRCUITS.	64	86	68	63	35	
A	50	A3-27 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR PARALLEL RESISTIVE CIRCUITS.	58	71	61	59	30	
A	51	A3-28 DO YOU CALCULATE POWER DISSIPATION FOR PARALLEL RESISTIVE CIRCUITS.	51	43	54	52	30	
B	52	B1-01 DO YOU MEASURE RESISTANCE.	88	100	95	87	44	
B	53	B1-02 DO YOU REPAIR AN OHMMETER.	51	71	61	43	19	
B	54	B1-03 DO YOU MEASURE VOLTAGE.	89	100	96	88	44	
B	55	B1-04 DO YOU REPAIR A VOLTMETER.	52	79	61	46	19	MULTIMETER USES
B	56	B1-05 DO YOU REPAIR AN AMMETER.	49	71	58	42	19	
B	57	B1-06 DO YOU MEASURE CURRENT.	81	93	87	80	37	
B	58	B1-07 DO YOU USE A MULTIMETER.	89	100	94	89	46	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

			DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	
B	59	B1-08	DO YOU DIRECTLY USE A QUANTITY OF CHARGE CALLED A COULOMB.	7	7	7	8	4	
B	60	B1-09	DO YOU READ SCHEMATICS.	94	100	95	95	77	
B	61	B2-01	DO YOU USE OR REFER THE TERM EFFECTIVE VOLTAGE (RMS).	93	93	94	94	84	
B	62	B2-02	DO YOU USE OR REFER THE TERM PEAK TO PEAK VOLTAGE.	93	93	94	93	86	
B	63	B2-03	DO YOU USE OR REFER THE TERM AVERAGE VOLTAGE (DC).	85	79	86	85	77	ALTERNATING CURRENT
B	64	B2-04	DO YOU USE OR REFER THE TERM WAVE LENGTH.	67	43	65	68	77	
B	65	B2-05	DO YOU USE OR REFER THE TERM FREQUENCY.	94	93	95	95	89	
B	66	B2-06	DO YOU USE OR REFER THE TERM INSTANTANEOUS VALUE.	53	57	52	54	56	
B	67	B3-01	DO YOU WORK WITH INDUCTORS OR CIRCUITS CONTAINING INDUCTORS, CHOKES, OR CHOKE COILS IN YOUR PRESENT JOB.	74	71	82	71	30	
B	68	B3-02	DO YOU INSPECT INDUCTORS.	74	79	81	72	37	
B	69	B3-03	DO YOU CLEAN INDUCTORS.	48	36	60	40	12	INDUCTORS AND INDUCTIVE REACTANCE
B	70	B3-04	DO YOU ADJUST INDUCTORS.	71	64	82	66	28	
B	71	B3-05	DO YOU REMOVE OR REPLACE INDUCTORS.	71	79	81	66	25	
B	72	B3-06	DO YOU USE OR REFER TO INDUCTANCE.	76	79	83	75	39	
B	73	B3-07	DO YOU USE OR REFER TO HENRIES.	68	71	73	68	32	
B	74	B3-08	DO YOU USE OR REFER TO INDUCTIVE REACTANCE.	57	57	58	61	28	
B	75	B3-09	DO YOU USE OR REFER TO COPPER LOSS IN INDUCTORS.	10	14	9	11	5	
B	76	B3-10	DO YOU USE OR REFER TO HYSTERESIS LOSS IN INDUCTORS.	18	14	20	17	7	
B	77	B3-11	DO YOU USE OR REFER TO EDDY CURRENT LOSS IN INDUCTORS.	16	36	18	14	11	
B	78	B3-12	DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTANCE IS PROPORTIONAL TO THE SQUARE OF THE	14	21	17	11	11	
B	79	B3-13	DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE	11	14	14	7	9	
B	80	B3-14	DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS INVERSELY PROPORTIONAL TO	11	14	13	8	9	
B	81	B3-15	DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE	15	21	16	15	9	
B	82	B3-16	DO YOU CALCULATE INDUCTANCE FOR A PARTICULAR INDUCTOR USING FORMULAS.	17	29	21	14	7	
B	83	B3-17	DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES.	27	36	30	29	14	
B	84	B3-18	DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN PARALLEL.	27	36	30	25	16	
B	85	B3-19	DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES-PARALLEL CIRCUITS.	23	29	27	21	12	
B	86	B3-20	DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LAGS VOLTAGE IN AC INDUCTOR CIRCUITS.	35	36	34	37	26	
B	87	B3-21	DO YOU CALCULATE INDUCTIVE REACTANCE.	30	43	31	32	14	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

			DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	
B	88	B3-22	DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTIVE REACTANCE IS DIRECTLY PROPORTIONAL TO	47	50	45	54	26	
B	89	B3-23	DO YOU WORK WITH POWER INDUCTORS.	37	14	37	40	28	
B	90	B3-24	DO YOU WORK WITH AUDIO FREQUENCY INDUCTORS.	64	71	67	66	35	
B	91	B3-25	DO YOU WORK WITH RADIO FREQUENCY INDUCTORS.	65	71	68	67	35	
C	92	C1-01	DO YOU WORK WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS ON YOUR PRESENT JOB.	81	86	91	77	33	
C	93	C1-02	DO YOU INSPECT CAPACITORS.	82	100	90	78	39	
C	94	C1-03	DO YOU CLEAN CAPACITORS.	60	64	72	54	14	
C	95	C1-04	DO YOU ADJUST CAPACITORS.	82	100	92	77	35	
C	96	C1-05	DO YOU TEST CAPACITORS.	81	93	90	79	37	CAPACITORS AND CAPACITIVE REACTANCE
C	97	C1-06	DO YOU DISCHARGE CAPACITORS.	77	86	84	76	35	
C	98	C1-07	DO YOU REMOVE OR REPLACE CAPACITORS.	79	100	91	73	26	
C	99	C1-08	DO YOU USE OR REFER TO DISTRIBUTED CAPACITANCE.	37	36	32	45	23	
C	100	C1-09	DO YOU USE OR REFER TO ORBITAL STRESS OF ELECTRONS IN A DIELECTRIC.	5	0	5	5	5	
C	101	C1-10	DO YOU USE OR REFER TO FARADS, MICROFARADS, OR PICOFARADS.	85	86	92	84	40	
C	102	C1-11	DO YOU USE OR REFER TO CAPACITANCE.	85	93	92	83	40	
C	103	C1-12	DO YOU USE OR REFER TO DIELECTRIC CONSTANT.	27	14	30	27	14	
C	104	C1-13	DO YOU USE OR REFER TO WORKING VOLTAGE RATING OF CAPACITORS.	80	79	85	81	39	
C	105	C1-14	DO YOU USE OR REFER TO CAPACITIVE REACTANCE.	52	50	53	56	26	
C	106	C1-15	DO YOU USE OR REFER TO CAPACITOR COLOR CODES.	59	50	61	61	37	
C	107	C1-16	THE CAPACITORS YOU WORK WITH IN DC CIRCUITS.	81	93	90	78	37	
C	108	C1-17	THE CAPACITORS YOU WORK WITH ARE IN AC CIRCUITS.	85	93	95	83	37	
C	109	C1-18	THE CAPACITORS YOU WORK WITH ARE IN CIRCUITS WITH BOTH DC AND AC.	84	100	92	82	37	
C	110	C1-19	THE CAPACITORS YOU WORK WITH ARE DON'T REMEMBER WHICH CIRCUITS.	7	7	10	5	5	
C	111	C1-20	DO YOU CALCULATE CAPACITANCE FOR A PARTICULAR CAPACITOR USING FORMULAS.	24	14	27	22	14	
C	112	C1-21	DO YOU USE OR REFER TO THE GENERAL RULE THAT THE CAPACITANCE OF A CAPACITOR IS DIRECTLY PROPORTIONAL	14	21	16	13	7	
C	113	C1-22	DO YOU USE OR REFER TO THE GENERAL RULE THAT THE CAPACITANCE OF A CAPACITOR IS INVERSELY PROPORTIONAL	19	29	19	20	7	
C	114	C1-23	DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES.	52	93	59	59	25	
C	115	C1-24	DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN PARALLEL.	53	93	55	57	26	
C	116	C1-25	DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES-PARALLEL CIRCUITS.	93	93	95	95	19	
C	117	C1-26	DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT DOES NOT FLOW THROUGH CAPACITORS, IT ONLY	48	57	48	50	30	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005
C 118	C1-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEADS VOLTAGE IN AC CAPACITOR CIRCUITS.	36	50	33	40	25
C 119	C1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITIVE REACTANCE IS INVERSELY PROPORTIONAL TO	49	57	46	56	30
C 120	C1-29 DO YOU CALCULATE CAPACITIVE REACTANCE.	33	43	32	37	21
C 121	C1-30 DO YOU WORK WITH ROTOR-STATOR CAPACITORS (VARIABLE).	79	93	85	77	40
C 122	C1-31 DO YOU WORK WITH COMPRESSION (TRIMMER) CAPACITORS.	80	71	88	77	40
C 123	C1-32 DO YOU WORK WITH ELECTROLYTIC CAPACITORS (FIXED).	83	93	92	80	40
C 124	C1-33 DO YOU WORK WITH PAPER CAPACITORS (FIXED).	83	93	91	80	40
C 125	C1-34 DO YOU WORK WITH MICA CAPACITORS (FIXED).	83	93	91	80	40
C 126	C1-35 DO YOU WORK WITH CERAMIC CAPACITORS (FIXED).	84	100	92	80	40
C 127	C1-36 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF CAPACITORS.	6	7	8	5	0
C 128	C2-01 DO YOU WORK WITH TRANSFORMERS ON YOUR PRESENT JOB.	74	64	83	71	26
C 129	C2-02 DO YOU INSPECT TRANSFORMERS.	76	79	81	76	37
C 130	C2-03 DO YOU CLEAN TRANSFORMERS.	46	43	53	44	11
C 131	C2-04 DO YOU ADJUST TRANSFORMERS.	46	43	49	48	19
C 132	C2-05 DO YOU TROUBLESHOOT TRANSFORMERS.	72	71	77	74	32
C 133	C2-06 DO YOU REMOVE OR REPLACE COMPLETE TRANSFORMERS.	72	71	81	70	21
C 134	C2-07 DO YOU REMOVE OR REPLACE TRANSFORMER PARTS, SUCH AS THE PRIMARY WINDING.	8	0	11	6	4
C 135	C2-08 DO YOU MAKE A DISTINCTION BETWEEN MUTUAL INDUCTION AND MUTUAL INDUCTANCE (M).	8	14	8	7	5
C 136	C2-09 DO YOU USE THE SYMBOL FOR MUTUAL INDUCTANCE, M.	8	14	9	5	7
C 137	C2-10 DO YOU REFER TO OR USE THE COEFFICIENT OF COUPLING WHEN WORKING WITH TRANSFORMERS.	15	29	16	15	5
C 138	C2-11 DO YOU CALCULATE TURNS RATIOS FOR TRANSFORMERS USING CURRENT OR VOLTAGE RATIOS.	26	36	28	25	12
C 139	C2-12 DO YOU REFER TO REFLECTED IMPEDANCE WHEN WORKING WITH TRANSFORMERS.	18	29	19	18	11
C 140	C2-13 DO YOU CALCULATE IMPEDANCE INTERACTIONS FOR TRANSFORMERS.	8	14	10	7	2
C 141	C2-14 DO YOU WORK WITH AUTOTRANSFORMERS.	72	64	75	74	39
C 142	C2-15 DO YOU WORK WITH POWER TRANSFORMERS.	75	86	79	76	39
C 143	C2-16 DO YOU WORK WITH AUDIO TRANSFORMERS.	66	57	68	69	37
C 144	C2-17 DO YOU WORK WITH RADIO FREQUENCY TRANSFORMERS.	63	93	63	67	37
C 145	C2-18 DO YOU WORK WITH DON'T REMEMBER WHAT TYPE OF TRANSFORMER.	7	14	10	4	0
C 146	C2-19 DO YOU CHECK TRANSFORMERS FOR OPEN WINDINGS BY MEASURING RESISTANCE.	75	71	81	76	35
C 147	C2-20 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING RESISTANCE.	69	57	74	70	30
C 148	C2-21 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING OUTPUT VOLTAGES.	67	79	73	66	35
C 149	C2-22 DO YOU MEASURE RESISTANCE OF TRANSFORMER WINDINGS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR	30	29	31	31	18

TRANSFORMERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005
C 150	C2-23	DO YOU MEASURE OUTPUT VOLTAGE OF TRANSFORMERS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-	49	69	51	50	25
C 151	C2-24	DO YOU REFER TO THE BASIC TRANSFORMER SCHEMATIC SYMBOLS FOR TRANSFORMERS.	78	79	84	79	39
C 152	C2-25	DO YOU REFER TO THE MULTIPLE SECONDARY-WINDINGS SCHEMATIC SYMBOLS FOR TRANSFORMERS.	74	71	78	77	35
C 153	C2-26	DO YOU REFER TO THE MULTIPLE TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS.	75	71	79	77	37
C 154	C2-27	DO YOU REFER TO THE CENTER TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS.	77	79	82	78	39
C 155	C2-28	DO YOU REFER TO THE AIR CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS.	52	50	53	56	32
C 156	C2-29	DO YOU REFER TO THE IRON CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS.	55	64	58	56	32
C 157	C2-30	DO YOU REFER TO THE COMBINATIONS OF THE ABOVE SCHEMATIC SYMBOLS FOR TRANSFORMERS.	66	57	71	65	37
C 158	C2-31	DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING	43	50	39	51	25
C 159	C2-32	DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN TRANSFORMERS YOU WORK WITH.	32	43	36	31	16
C 160	C2-33	DO YOU REFER TO OR USE THE GENERAL RULE THAT THE TURNS RATIO OF A TRANSFORMER IS EQUAL TO THE VOLTAGE	39	36	41	41	19
C 161	C2-34	DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN RATIOS FOR TRANSFORMERS.	54	57	54	59	25
C 162	C2-35	DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS USING TURNS RATIOS.	28	36	30	28	11
C 163	C2-36	DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS USING TURNS RATIOS.	23	36	25	21	11
C 164	C2-37	DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH 3 PHASE TRANSFORMERS.	34	7	32	39	21
C 165	C2-38	DO YOU INSPECT 3 PHASE TRANSFORMERS.	26	7	26	28	21
C 166	C2-39	DO YOU CLEAN OR LUBRICATE 3 PHASE TRANSFORMERS.	12	7	15	11	9
C 167	C2-40	DO YOU ADJUST 3 PHASE TRANSFORMERS.	12	14	13	13	5
C 168	C2-41	DO YOU TROUBLESHOOT 3 PHASE TRANSFORMERS.	24	14	24	27	14
C 169	C2-42	DO YOU REMOVE OR REPLACE COMPLETE 3 PHASE TRANSFORMER.	24	14	23	26	14
C 170	C2-43	DO YOU REMOVE OR REPLACE 3 PHASE TRANSFORMER PARTS, SUCH AS A WINDING.	5	0	6	3	9
C 171	C3-01	DO YOU USE OR REFER TO PERMANENT MAGNETS.	52	79	98	54	67
C 172	C3-02	DO YOU USE OR REFER TO TEMPORARY MAGNETS.	35	57	33	36	39
C 173	C3-03	DO YOU USE OR REFER TO RETENTIVITY OF MAGNETIC MATERIALS.	16	21	15	15	23
C 174	C3-04	DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC MATERIALS.	13	21	13	12	16

MAGNETISM

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	
C	175	C3-05 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS.	17	29	16	16	25	
C	176	C3-06 DO YOU USE OR REFER TO RESIDUAL MAGNETISM.	23	21	20	25	33	
C	177	C3-07 DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE OR FLUX.	30	43	25	34	37	
C	178	C3-08 DO YOU USE OR REFER TO WEBER'S THEORY OF MAGNETISM.	5	7	7	4	4	
C	179	C3-09 DO YOU USE OR REFER TO THE DOMAIN THEORY OF MAGNETISM.	7	7	8	5	7	
C	180	C3-10 DO YOU USE OR REFER TO MAGNETIC INDUCTION.	26	29	22	29	37	
C	181	C3-11 DO YOU USE OR REFER TO FLUX DENSITY.	21	21	17	23	28	
C	182	C3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT FOR MAGNETIC POLES, LIKE POLES REPEL AND UNLIKE POLES	49	57	51	48	49	
C	183	C3-13 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE DIRECTION OF MAGNETIC FIELDS ABOUT STRAIGHT WIRES.	17	14	20	14	16	
C	184	C3-14 DO YOU USE THE LEFT THUMB RULE TO FIND THE NORTH POLE OF A CURRENT CARRYING COIL.	15	21	17	12	16	
D	185	D1-01 DO YOU WORK WITH RC, LR, OR RCL CIRCUITS ON YOUR PRESENT JOB.	62	57	66	63	30	
D	186	D1-02 DO YOU USE OR REFER TO VECTORS WHEN WORKING WITH RCL CIRCUITS.	21	14	19	24	16	
D	187	D1-03 DO YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN WORKING WITH RCL CIRCUITS.	15	14	15	18	7	RCL CIRCUITS
D	188	D1-04 DO YOU USE OR REFER TO SINE WHEN WORKING WITH RCL CIRCUITS.	27	21	25	32	19	
D	189	D1-05 DO YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL CIRCUITS.	26	21	25	30	16	
D	190	D1-06 DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL CIRCUITS.	25	21	23	28	16	
D	191	D1-07 DO YOU USE OR REFER TO WATTS WHEN WORKING WITH RCL CIRCUITS.	43	50	45	41	30	
D	192	D1-08 DO YOU USE OR REFER TO TRUE POWER (PT) WHEN WORKING WITH RCL CIRCUITS.	32	36	32	33	25	
D	193	D1-09 DO YOU USE OR REFER TO MAXIMUM POWER (PM) WHEN WORKING WITH RCL CIRCUITS.	33	43	34	33	23	
D	194	D1-10 DO YOU USE OR REFER TO AVERAGE POWER (PAVE) WHEN WORKING WITH RCL CIRCUITS.	36	36	37	38	24	
D	195	D1-11 DO YOU USE OR REFER TO APPARENT POWER (PA) WHEN WORKING WITH RCL CIRCUITS.	28	29	29	28	21	
D	196	D1-12 DO YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING WITH RCL CIRCUITS.	29	29	30	29	18	
D	197	D1-13 DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN WORKING WITH RCL CIRCUITS.	55	57	56	59	32	
D	198	D1-14 DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH RCL CIRCUITS.	62	43	63	68	33	
D	199	D1-15 DO YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH RCL CIRCUITS.	54	50	53	61	32	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005
D 200	D1-16 DO YOU USE OR REFER TO RESONANT FREQUENCY WHEN WORKING WITH RCL CIRCUITS.	59	50	61	63	33
D 201	D1-17 DO YOU USE OR REFER TO HALF POWER POINTS WHEN WORKING WITH RCL CIRCUITS.	48	21	44	59	23
D 202	D1-18 DO YOU USE OR REFER TO BRANDPASS REGION WHEN WORKING WITH RCL CIRCUITS.	54	29	57	58	28
D 203	D1-19 DO YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH RCL CIRCUITS.	32	21	29	37	23
D 204	D1-20 DO YOU USE OR REFER TO TANK CIRCUITS WHEN WORKING WITH RCL CIRCUITS.	55	43	55	61	30
D 205	D1-21 DO YOU DETERMINE VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS: SINE OF AN ANGLE = OPPOSITE SIDE	29	21	26	36	23
D 206	D1-22 DO YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS.	13	14	11	16	7
D 207	D1-23 DO YOU CALCULATE TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS.	20	29	21	20	9
D 208	D1-24 DO YOU CALCULATE PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS.	13	7	10	17	9
D 209	D1-25 DO YOU CALCULATE TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS.	18	21	19	18	7
D 210	D1-26 DO YOU CALCULATE IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS.	10	0	9	13	5
D 211	D1-27 DO YOU CALCULATE APPARENT POWER (PA) FOR SERIES RCL CIRCUITS.	14	7	15	14	9
D 212	D1-28 DO YOU CALCULATE TRUE POWER (PT) FOR SERIES RCL CIRCUITS.	17	7	17	17	12
D 213	D1-29 DO YOU CALCULATE POWER FACTORS (PF) FOR SERIES RCL CIRCUITS.	15	7	16	16	9
D 214	D1-30 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RCL CIRCUITS.	17	21	19	16	7
D 215	D1-31 DO YOU CALCULATE IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS.	10	0	10	12	7
D 216	D1-32 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING THE ASSUMED VOLTAGE METHOD.	11	21	12	11	4
D 217	D1-33 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING OHM'S LAW.	18	14	20	18	7
D 218	D1-34 DO YOU CHECK CAPACITORS USING OHMMETERS.	62	57	65	65	30
D 219	D1-35 DO YOU CHECK CAPACITORS USING SUBSTITUTION.	61	57	64	62	32
D 220	D1-36 DO YOU CHECK INDUCTORS USING OHMMETERS.	58	36	60	63	30
D 221	D1-37 DO YOU CHECK INDUCTORS USING SUBSTITUTION.	55	36	58	57	26
D 222	D1-38 DO YOU USE OR REFER TO THE GENERAL RULE THAT THETA=0, PF=1, AND PA=PT FOR RESONANT CIRCUITS.	8	14	8	10	4
D 223	D1-39 DO YOU CALCULATE RESONANT FREQUENCIES FOR RCL CIRCUITS.	23	7	24	23	16
D 224	D1-40 DO YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE	30	14	26	36	21

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	
D 225	D1-01 DO YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT	27	14	22	36	21	
D 226	D1-02 DO YOU USE OR REFER TO THE GENERAL RULE THAT HALF POWER POINTS ARE AT 70.7 PERCENT OF THE PEAK	48	36	45	56	28	
D 227	D1-03 DO YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO Q.	26	14	25	29	19	
D 228	D1-04 DO YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE, CAPACITANCE, OR INDUCTANCE WILL AFFECT	24	21	24	26	18	
D 229	D2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH, USE, OR REFER TO SERIES OR PARALLEL RESONANCE CIRCUITS OR	41	21	40	44	37	
D 230	D2-02 DO YOU WORK WITH, USE, OR REFER TO TIME CONSTANTS.	39	21	36	43	37	
D 231	D2-03 DO YOU WORK WITH, USE, OR REFER TO AVAILABLE VOLTAGE.	22	21	23	19	26	SERIES AND PARALLEL RESONANCE (TIME CONSTANTS)
D 232	D2-04 DO YOU WORK WITH, USE, OR REFER TO TRANSIENT INTERVALS.	17	7	17	17	16	
D 233	D2-05 DO YOU USE OR REFER TO THE GENERAL RULE THAT A CAPACITOR IS FULLY CHARGED (OR DISCHARGED) AFTER FIVE	25	14	22	30	19	
D 234	D2-06 DO YOU USE OR REFER TO UNIVERSAL TIME CONSTANT CHARTS.	13	14	13	12	12	
D 235	D2-07 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CIRCUITS CURRENT OR COMPONENT VOLTAGES AFTER A	13	14	11	15	7	
D 236	D2-08 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE THE TIME REQUIRED FOR CIRCUIT CURRENT OR COMPONENT	15	14	15	16	7	
D 237	D2-09 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE COMPONENT VALUES REQUIRED FOR CIRCUIT CURRENT AND	14	14	12	17	9	
D 238	D2-10 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT IN LR CIRCUITS REACHES ITS MINIMUM VALUE (OR	16	14	15	18	14	
D 239	D3-01 DO YOU WORK WITH CIRCUITS USED AS FILTERS ON YOUR PRESENT JOB.	65	50	70	66	28	
D 240	D3-02 DO YOU INSPECT FILTER CIRCUITS.	62	57	66	63	26	
D 241	D3-03 DO YOU CLEAN FILTER CIRCUITS.	39	36	46	36	9	
D 242	D3-04 DO YOU ALIGN OR ADJUST FILTER CIRCUITS.	53	43	59	51	18	FILTERS
D 243	D3-05 DO YOU TROUBLESHOOT TO THE FILTER CIRCUIT.	59	57	63	60	26	
D 244	D3-06 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF FILTER CIRCUITS.	61	57	66	62	28	
D 245	D3-07 DO YOU REMOVE OR REPLACE THE COMPLETE FILTER CIRCUIT.	56	29	61	57	21	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005
D	246	D3-08 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF FILTER CIRCUITS.	57	57	63	58	21
D	247	D3-09 DO YOU WORK ON LOW PASS FILTERS.	63	43	67	66	28
D	248	D3-10 DO YOU WORK ON HIGH PASS FILTERS.	61	50	65	64	28
D	249	D3-11 DO YOU WORK ON BANDPASS FILTERS.	61	50	66	62	28
D	251	D3-13 DO YOU WORK ON DON'T REMEMBER WHICH TYPE OF FILTER	53	36	57	55	25
D	250	D3-12 DO YOU WORK ON BAND-REJECT FILTERS.	9	14	11	7	0
D	252	D3-14 DO YOU WORK WITH L-SECTION FILTER CONFIGURATIONS.	50	36	51	55	23
D	253	D3-15 DO YOU WORK WITH T-SECTION FILTER CONFIGURATIONS.	53	43	53	58	24
D	254	D3-16 DO YOU WORK WITH PI-SECTION FILTER CONFIGURATIONS.	53	43	53	59	26
D	255	D3-17 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF FILTER CONFIGURATIONS.	14	14	19	10	2
D	256	D3-18 ARE PARALLEL RESONANT CIRCUITS USED IN FILTERS YOU WORK WITH.	45	21	45	49	26
D	257	D3-19 ARE SERIES-PARALLEL CIRCUITS USED IN FILTERS YOU WORK WITH.	45	29	45	50	26
D	258	D3-20 ARE SERIES RESONANT CIRCUITS USED IN FILTERS YOU WORK WITH.	46	21	45	51	24
D	259	D3-21 ARE DON'T REMEMBER WHICH TYPE OF BASIC CIRCUIT USED IN FILTERS YOU WORK WITH.	19	21	24	16	4
D	260	D3-22 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CAPACITANCE OR INDUCTANCE VALUES REQUIRED FOR SPECIFIC	14	21	15	14	7
E	261	E1-01 DO YOU WORK WITH COUPLING DEVICES ON YOUR PRESENT JOB.	63	43	66	68	30
E	262	E1-02 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED	63	43	64	68	32
E	263	E1-03 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED	57	43	58	62	30
E	264	E1-04 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED	62	50	63	66	32
E	265	E1-05 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THE RC COUPLING FUNCTIONS.	61	43	63	64	28
E	266	E1-06 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THE IMPEDANCE COUPLING FUNCTIONS.	55	36	57	59	28
E	267	E1-07 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THE TRANSFORMER COUPLING FUNCTIONS.	59	50	61	63	28
E	268	E1-08 DO YOU WORK WITH DIRECTLY COUPLED CIRCUITS.	61	50	62	65	30
E	269	E1-09 DO YOU WORK WITH CAPACITIVE-RESISTIVE COUPLED CIRCUITS.	62	50	63	67	30
E	270	E1-10 DO YOU WORK WITH CAPACITIVE-INDUCTIVE COUPLED CIRCUITS.	56	36	58	59	30
E	271	E1-11 DO YOU WORK WITH TRANSFORMER COUPLED CIRCUITS.	60	50	60	65	28
E	272	E1-12 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF COUPLING CIRCUIT.	7	7	8	6	0

COUPLING

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	
E 273	E2-01	ON YOUR PRESENT JOB DO YOU PERFORM SOLDERING TECHNIQUES OR INSPECT OR EVALUATE SOLDERED CONNECTIONS.	81	93	89	77	44	
E 274	E2-02	DO YOU SELECT TYPE OF SOLDER TO USE.	71	79	78	67	39	
E 275	E2-03	DO YOU ADD FLUX TO CONNECTIONS.	70	86	81	65	28	
E 276	E2-04	DO YOU CLEAN CONNECTIONS USING SOLVENTS.	73	100	83	68	28	SOLDERING
E 277	E2-05	DO YOU STRIP INSULATION FROM WIRES.	80	100	91	76	30	
E 278	E2-06	DO YOU CONNECT OR DISCONNECT HEAT SINKS.	78	93	89	73	32	
E 279	E2-07	DO YOU BEND OR SHAPE WIRES OR LEADS.	81	100	91	76	32	
E 280	E2-08	DO YOU CUT WIRES.	81	100	91	76	32	
E 281	E2-09	DO YOU FILE OR SHAPE SOLDERING IRON TIPS.	60	93	67	57	26	
E 282	E2-10	DO YOU TIN SOLDERING IRON TIPS.	78	100	88	74	32	
E 283	E2-11	DO YOU CLEAN SOLDERING IRON TIPS.	80	100	90	76	32	
E 284	E2-12	DO YOU CLEAN ELECTRICAL SURFACES USING ERASERS.	76	79	85	74	30	
E 285	E2-13	DO YOU TIN OR PRE-TIN CONDUCTORS.	79	93	89	76	30	
E 286	E2-14	DO YOU INSPECT SOLDERED CONNECTIONS.	82	100	90	79	44	
E 287	E2-15	DO YOU DESOLDER CONNECTIONS BY WICKING.	58	71	63	56	30	
E 288	E2-16	DO YOU DESOLDER CONNECTIONS USING VACUUM DESOLDERING TOOLS.	76	100	86	71	30	
E 289	E2-17	DO YOU CUT COMPONENT LEADS TO REMOVE COMPONENTS.	67	93	73	64	30	
E 290	E2-18	DO YOU CRUSH COMPONENTS FOR REMOVAL.	27	7	31	26	12	
E 291	E2-19	DO YOU MAKE HARDWIRE CONNECTIONS.	77	93	87	72	28	
E 292	E2-20	DO YOU MAKE PRINTED CIRCUIT BOARD CONNECTIONS	81	100	91	76	30	
E 293	E2-21	DO YOU SOLDER PASSIVE COMPONENTS SUCH AS RESISTORS OR CAPACITORS ON PRINTED CIRCUIT BOARDS	81	100	91	77	30	
E 294	E2-22	DO YOU SOLDER ACTIVE COMPONENTS SUCH AS SOLID-STATE DIODES OR TRANSISTORS ON PRINTED CIRCUIT BOARDS	80	100	90	77	30	
E 295	E3-01	DO YOU WORK WITH RELAYS ON YOUR PRESENT JOB	66	64	72	66	30	
E 296	E3-02	DO YOU ADJUST RELAYS	42	57	46	42	19	
E 297	E3-03	DO YOU CLEAN RELAYS	58	64	62	59	25	
E 298	E3-04	DO YOU INSPECT RELAYS	64	71	69	64	30	
E 299	E3-05	DO YOU REMOVE OR REPLACE COMPLETE RELAYS	64	64	71	63	23	RELAYS
E 300	E3-06	DO YOU REMOVE OR REPLACE PARTS OR RELAYS	24	43	26	23	11	
E 301	E3-07	DO YOU TROUBLESHOOT RELAYS	63	79	67	64	30	
E 302	E3-08	DO YOU STRAIGHTEN RELAY CONTACTS	50	64	56	48	23	
E 303	E3-09	DO YOU PERFORM TASKS ON RELAY CONTACTS	55	71	59	54	30	
E 304	E3-10	DO YOU PERFORM TASKS ON RELAY CORES	15	21	16	14	7	
E 305	E3-11	DO YOU PERFORM TASKS ON RELAY COILS	20	36	22	19	9	
E 306	E3-12	DO YOU PERFORM TASKS ON RELAY ARMATURES	21	50	23	18	9	
E 307	E3-13	DO YOU PERFORM TASKS ON RELAY SPRINGS	33	57	36	32	16	
E 308	E3-14	DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY OPEN (NO) SCHEMATIC SYMBOLS FOR RELAYS	59	71	60	62	30	
E 309	E3-15	DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY CLOSED (NC) SCHEMATIC SYMBOLS FOR RELAYS	59	71	60	62	26	
E 310	E3-16	DO YOU USE OR REFER TO SINGLE POLE, DOUBLE THROW (SPDT) SCHEMATIC SYMBOLS FOR RELAYS	59	71	60	62	32	
E 311	E3-17	DO YOU USE OR REFER TO DOUBLE POLE, DOUBLE THROW (DPDT) SCHEMATIC SYMBOLS FOR RELAYS	59	57	59	63	32	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	
E 312	E3-18 DO YOU USE OR REFER TO OTHER RELAY SYMBOLS SCHEMATIC SYMBOLS FOR RELAYS	52	50	54	55	28	
E 313	E3-19 DO YOU CHECK ELECTRICAL CONTINUITY OF COILS BY MEASURING RESISTANCE	61	57	64	63	28	
F 314	F1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH MICROPHONES	10	0	11	11	7	
F 315	F1-02 DO YOU INSPECT MICROPHONES	8	0	9	8	4	
F 316	F1-03 DO YOU CLEAN MICROPHONES	6	0	6	7	2	
F 317	F1-04 DO YOU OPERATE MICROPHONES	11	0	12	10	7	MICROPHONES
F 318	F1-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT	8	0	8	9	0	
F 319	F1-06 DO YOU TROUBLESHOOT DOWN TO MICROPHONE PARTS	3	0	4	3	2	
F 320	F1-07 DO YOU REMOVE OR REPLACE COMPLETE MICROPHONES	8	0	9	8	2	
F 321	F1-08 DO YOU REMOVE OR REPLACE MICROPHONE PARTS	3	0	4	4	2	
F 322	F1-09 DO YOU PERFORM TASKS ON CARBON MICROPHONES	5	0	5	6	2	
F 323	F1-10 DO YOU PERFORM TASKS ON CAPACITOR MICROPHONES	4	0	4	5	2	
F 324	F1-11 DO YOU PERFORM TASKS ON CRYSTAL MICROPHONES	6	0	5	7	2	
F 325	F1-12 DO YOU PERFORM TASKS ON DYNAMIC MICROPHONES	6	0	7	6	2	
F 326	F1-13 DO YOU PERFORM TASKS ON VELOCITY RIBBON MICROPHONES	2	0	2	2	2	
F 327	F2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH SPEAKERS	17	7	17	20	9	
F 328	F2-02 DO YOU INSPECT SPEAKERS	14	7	14	16	5	
F 329	F2-03 DO YOU CLEAN SPEAKERS	10	7	10	11	4	SPEAKERS
F 330	F2-04 DO YOU OPERATE SPEAKERS	16	7	16	18	7	
F 331	F2-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT	14	7	14	16	4	
F 332	F2-06 DO YOU TROUBLESHOOT DOWN TO SPEAKER PARTS	4	0	3	5	2	
F 333	F2-07 DO YOU REMOVE OR REPLACE COMPLETE SPEAKERS	14	7	14	16	2	
F 334	F2-08 DO YOU REMOVE OR REPLACE SPEAKER PARTS	2	0	2	2	2	
F 335	F2-09 DO YOU PERFORM ANY TASKS ON SPEAKER CONES	2	0	2	4	0	
F 336	F2-10 DO YOU PERFORM ANY TASKS ON SPEAKER SPIDERS	1	0	1	2	0	
F 337	F2-11 DO YOU PERFORM ANY TASKS ON SPEAKER FIELD COILS	2	0	1	4	2	
F 338	F2-12 DO YOU PERFORM ANY TASKS ON SPEAKER VOICE COILS	3	0	2	5	2	
F 339	F2-13 DO YOU PERFORM ANY TASKS ON SPEAKER PERMANENT MAGNETS	2	0	2	3	2	
F 340	F2-14 DO YOU PERFORM ANY TASKS ON SPEAKER ELECTROMAGNETS	2	0	2	3	2	
F 341	F2-15 DO YOU PERFORM ANY TASKS ON SPEAKER SOFT IRON CORES	2	0	1	2	2	
F 342	F3-01 DO YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB	84	93	89	86	39	
F 343	F3-02 DO YOU USE OSCILLOSCOPES TO PERFORM OPERATIONAL CHECKS	83	86	89	84	39	
F 344	F3-03 DO YOU USE OSCILLOSCOPES TO PERFORM ALIGNMENTS OR ADJUSTMENTS	79	79	88	78	28	OSCILLOSCOPES
F 345	F3-04 DO YOU USE OSCILLOSCOPES TO TROUBLESHOOT ELECTRONIC CIRCUITS	79	86	88	77	35	
F 346	F3-05 DO YOU USE OSCILLOSCOPES TO MEASURE FREQUENCY	77	71	83	77	33	
F 347	F3-06 DO YOU USE OSCILLOSCOPES TO MEASURE TIME	79	71	83	81	37	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005
F 348	F3-07 DO YOU USE OSCILLOSCOPES TO OBSERVE LISAJOUS PATTERNS	63	50	69	60	35
F 349	F3-08 DO YOU USE OSCILLOSCOPES TO OBSERVE SIGNALS WHILE UTILIZING ATTENUATOR PROBES	81	57	88	81	39
F 350	F3-09 DO YOU USE OSCILLOSCOPES TO MAKE FREQUENCY OR TIME MEASUREMENTS USING DELAY TIME MULTIPLIERS	68	50	71	72	35
F 351	F3-10 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE	84	79	89	85	39
F 352	F3-11 DO YOU USE OSCILLOSCOPES TO MEASURE OR OBSERVE SIGNALS AFTER FIRST ADJUSTING THE GAIN AND DC BAL CONTROLS	82	71	87	84	39
F 353	F3-12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE	78	79	83	79	37
G 354	G1-01 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT JOB	82	100	91	79	35
G 355	G1-02 DO YOU INSPECT DIODES	81	93	89	78	37
G 356	G1-03 DO YOU REMOVE OR REPLACE DIODES	79	100	89	76	26
G 357	G1-04 DO YOU CHECK DIODES USING AN INSTRUMENT	81	93	89	79	35
G 358	G1-05 DO YOU USE ENERGY LEVEL DIAGRAMS IN YOUR WORK WITH DIODES	11	7	14	9	5
G 359	G1-06 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES, TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE,	16	21	19	14	9
G 360	G1-07 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR DIODES	24	29	30	20	9
G 361	G1-08 DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES	65	71	67	68	32
G 362	G1-09 DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO OTHER ELECTRONIC COMPONENTS, SUCH AS RESISTORS, BASED ON	78	57	86	77	37
G 363	G1-10 DO YOU REFER TO OR DO YOU DETERMINE THE GENERAL EFFECTS OF DOPING ON CURRENT FLOW	12	7	14	12	2
G 364	G1-11 DO YOU USE OR REFER TO MEASUREMENTS OF FORWARD BIAS RESISTANCE	69	50	75	70	32
G 365	G1-12 DO YOU USE OR REFER TO DIODE COLOR CODING	45	43	44	49	30
G 366	G1-13 DO YOU USE OR REFER TO CENTRIFUGAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS	2	0	2	2	4
G 367	G1-14 DO YOU USE OR REFER TO CENTRIPETAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS	2	7	2	2	4
G 368	G1-15 DO YOU USE OR REFER TO DIODE NUMBERING SYSTEM, SUCH AS IN 538	71	79	75	73	35
G 369	G1-16 DO YOU USE OR REFER TO KINETIC ENERGY OF AN ELECTRON MOVING IN ORBIT	3	0	2	3	5
G 370	G1-17 DO YOU USE OR REFER TO POTENTIAL ENERGY OF AN ELECTRON MOVING IN ORBIT	3	0	3	3	5
G 371	G1-18 DO YOU USE OR REFER TO MEASUREMENTS OF REVERSE BIAS RESISTANCE	69	50	73	71	32
G 372	G1-19 DO YOU USE OR REFER TO NUMBER OF ELECTRONS IN A PARTICULAR SHELL OR ORBIT	5	0	4	5	5
G 373	G1-20 DO YOU USE OR REFER TO PERMISSIBLE ENERGY LEVELS OF AN ORBITING ELECTRON	3	0	3	4	4

SEMICONDUCTOR DIODES

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005
G 374	G1-21 DO YOU USE OR REFER TO FORBIDDEN ENERGY LEVELS OF AN ORBITING ELECTRON	3	0	3	3	4
G 375	G1-22 DO YOU USE OR REFER TO VALENCE ELECTRONS (THOSE IN THE OUTERMOST SHELL)	6	14	6	6	5
G 376	G1-23 DO YOU USE OR REFER TO ATOMIC NUMBER (TOTAL NUMBER OF ELECTRONS IN ATOM)	6	7	6	7	7
G 377	G1-24 DO YOU USE OR REFER TO SYMBOLS ON THE DIODE WHICH INDICATE THE CATHODE END	76	86	82	77	37
G 378	G1-25 DO YOU NEED TO KNOW WHICH MATERIALS ARE USED IN THE CONSTRUCTION OF DIODES SUCH AS GERMANIUM OR SILICON	47	36	49	49	25
G 379	G1-26 DO YOU NEED TO KNOW THAT SEMICONDUCTORS HAVE NEGATIVE TEMPERATURE COEFFICIENTS OF RESISTANCE (AS TEMPERATURE	49	57	52	49	23
G 380	G1-27 DO YOU USE OR REFER TO PN JUNCTION DIODE CHARACTERISTIC CURVES, SUCH AS VOLTAGE - CURRENT	34	21	39	31	19
G 381	G1-28 DO YOU DETERMINE WHETHER PN JUNCTION DIODES ARE FORWARD BIASED OR REVERSE BIASED WHEN YOU READ OR	65	57	66	70	32
G 382	G1-29 DO YOU USE OR REFER TO VALENCE BAND IN SEMICONDUCTOR MATERIALS	5	0	6	5	2
G 383	G1-30 DO YOU USE OR REFER TO FORBIDDEN BAND IN SEMICONDUCTOR MATERIALS	3	0	4	3	0
G 384	G1-31 DO YOU USE OR REFER TO CONDUCTION BAND IN SEMICONDUCTOR MATERIALS	5	0	7	4	0
G 385	G1-32 DO YOU USE OR REFER TO COVALENT BONDING IN SEMICONDUCTOR MATERIALS	5	0	5	5	4
G 386	G1-33 DO YOU USE OR REFER TO ELECTRON-HOLE PAIR CREATED IN SEMICONDUCTORS	6	0	5	7	4
G 387	G1-34 DO YOU USE OR REFER TO ELECTRON FLOW OR HOLE FLOW IN SEMICONDUCTORS	17	0	15	21	9
G 388	G1-35 DO YOU USE OR REFER TO DONOR IMPURITY IN SEMICONDUCTORS	6	0	6	7	5
G 389	G1-36 DO YOU USE OR REFER TO ACCEPTOR IMPURITY IN SEMICONDUCTORS	6	0	6	7	4
G 390	G1-37 DO YOU USE OR REFER TO P-TYPE SEMICONDUCTOR MATERIAL	33	57	34	35	18
G 391	G1-38 DO YOU USE OR REFER TO N-TYPE SEMICONDUCTOR MATERIAL	33	57	33	35	18
G 392	G1-39 DO YOU USE OR REFER TO MAJORITY CARRIERS IN SEMICONDUCTORS	10	0	10	11	5
G 393	G1-40 DO YOU USE OR REFER TO MINORITY CARRIERS IN SEMICONDUCTORS	9	0	10	10	4
G 394	G1-41 DO YOU USE OR REFER TO JUNCTION RECOMBINATION IN SEMICONDUCTORS	7	0	8	6	4
G 395	G1-42 DO YOU USE OR REFER TO DEPLETION REGION IN SEMICONDUCTORS	10	0	9	12	5
G 396	G1-43 DO YOU USE OR REFER TO RELATIONSHIP BETWEEN BARRIER WIDTH AND DIFFERENCE OF POTENTIAL	10	7	9	12	4

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005
G 397	G1-44 DO YOU USE OR REFER TO THE 10:1 BACK TO FRONT RESISTANCE RATIO FOR DIODES	80	71	88	78	37
G 398	G1-45 DO YOU USE OR REFER TO BARRIER HEIGHT IN SEMICONDUCTORS	7	7	9	6	2
G 399	G1-46 DO YOU USE OR REFER TO DIODE SUBSTITUTION INFORMATION	73	57	77	74	37
G 400	G1-47 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD CURRENT DIODE RATINGS	49	43	47	56	30
G 401	G1-48 DO YOU USE OR REFER TO PEAK RECURRENT FORWARD CURRENT DIODE RATINGS	36	36	37	38	19
G 402	G1-49 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT DIODE RATINGS	44	36	45	46	26
G 403	G1-50 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE DIODE RATINGS	59	57	56	67	37
G 404	G2-01 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB.	81	93	90	78	35
G 405	G2-02 DO YOU INSPECT TRANSISTORS	79	100	87	76	35
G 406	G2-03 DO YOU REMOVE OR REPLACE TRANSISTORS	78	100	88	75	25
G 407	G2-04 DO YOU CHECK TRANSISTORS USING AN INSTRUMENT	81	93	89	78	37
G 408	G2-05 DO YOU USE OR REFER TO EMITTER - BASE (EB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	80	93	87	79	35
G 409	G2-06 DO YOU USE OR REFER TO COLLECTOR - BASE (CB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	80	79	86	79	39
G 410	G2-07 DO YOU USE OR REFER TO EMITTER - COLLECTOR (EC) RESISTANCE MEASUREMENTS	79	79	85	79	39
G 411	G2-08 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE EMITTER - BASE JUNCTION	21	14	25	20	11
G 412	G2-09 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE COLLECTOR - BASE JUNCTION	21	14	25	19	11
G 413	G2-10 DO YOU USE OR REFER TO THE PHYSICAL SIZE OF THE TRANSISTOR STRUCTURE (COLLECTOR, BASE AND EMITTER)	52	64	59	48	18
G 414	G2-11 DO YOU USE OR REFER TO LEAKAGE CURRENT (ICBO) IN A TRANSISTOR	33	21	32	37	23
G 415	G2-12 DO YOU USE OR REFER TO TRANSISTOR SCHEMATIC SYMBOLS	83	93	91	82	39
G 416	G2-13 DO YOU USE OR REFER TO TRANSISTOR NOTATION SUCH AS Q1, Q2, Q3, ETC	84	93	91	82	39
G 417	G2-14 DO YOU USE OR REFER TO TRANSISTOR SUBSTITUTION INFORMATION	77	79	83	77	39
G 418	G2-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE TRANSISTOR BASE CURRENT IB IS NORMALLY SIGNIFICANTLY	37	50	38	37	23
G 419	G2-16 DO YOU USE THE INFORMATION THAT THE EFFECT OF EMITTER BASE VOLTAGE ON BASE CURRENT IS THE CONTROLLING FACTOR FOR	54	71	53	58	28
G 420	G2-17 DO YOU USE THE GENERAL RULE THAT LEAKAGE CURRENT (ICBO) IN A TRANSISTOR INCREASES AS TEMPERATURE INCREASES	31	43	28	35	23
G 421	G2-18 DO YOU USE OR REFER TO TRANSISTOR CHARACTERISTIC CURVES	43	43	49	41	16

TRANSISTORS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		Dy-TSk	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005
G 422	G2-19	DO YOU USE OR REFER TO BETA TRANSISTOR GAINS	23	21	21	27	14
G 423	G2-20	DO YOU USE OR REFER TO ALPHA TRANSISTOR GAINS	18	21	17	20	11
G 424	G2-21	DO YOU USE OR REFER TO GAMMA TRANSISTOR GAINS	15	21	13	17	11
G 425	G2-22	DO YOU CALCULATE BETA TRANSISTOR GAINS	9	14	10	7	11
G 426	G2-23	DO YOU CALCULATE ALPHA TRANSISTOR GAINS	7	14	8	6	5
G 427	G2-24	DO YOU CALCULATE GAMMA TRANSISTOR GAINS	6	14	6	5	4
G 428	G3-01	DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR PRESENT JOB	73	64	78	75	33
G 429	G3-02	DO YOU INSPECT TRANSISTOR AMPLIFIERS	71	64	76	72	33
G 430	G3-03	DO YOU ALIGN OR ADJUST TRANSISTOR AMPLIFIERS	67	57	73	68	26
G 431	G3-04	DO YOU TROUBLESHOOT TO THE AMPLIFIER CIRCUIT LEVEL	71	64	77	70	33
G 432	G3-05	DO YOU TROUBLESHOOT TO AMPLIFIER COMPONENTS	71	64	76	72	32
G 433	G3-06	DO YOU REMOVE OR REPLACE THE COMPLETE AMPLIFIER	60	50	67	60	19
G 434	G3-07	DO YOU REMOVE OR REPLACE AMPLIFIER COMPONENTS	68	64	75	68	25
G 435	G3-08	DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A CHANGE IN BASE	41	57	42	44	19
G 436	G3-09	DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN	17	14	17	18	14
G 437	G3-10	DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A CHANGE IN BASE	40	43	41	42	25
G 438	G3-11	DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN	17	21	17	18	9
G 439	G3-12	DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN BASE CURRENT WHICH RESULTS FROM AN INPUT SIGNAL	36	43	37	39	19
G 440	G3-13	DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN	18	21	18	19	7
G 441	G3-14	DO YOU USE THE LOAD-LINE METHOD OF ANALYSIS IN YOUR CIRCUIT ANALYSIS (THIS METHOD REQUIRES YOU TO PLOT A	7	14	7	8	4
G 442	G3-15	DO YOU USE OR REFER TO THE OPERATING POINT Q (QUIESCENT POINT) FOR A TRANSISTOR	26	29	27	27	16
G 443	G3-16	DO YOU CALCULATE THE SPECIFIC QUIESCENT POINT FOR A PARTICULAR TRANSISTOR	7	14	7	7	4
G 444	G3-17	DO YOU MEASURE VOLTAGE GAIN USED IN THE COMMON EMITTER CONFIGURATION	58	43	62	59	30
G 445	G3-18	DO YOU MEASURE CURRENT GAIN USED IN THE COMMON EMITTER CONFIGURATION	37	36	39	38	18
G 446	G3-19	DO YOU MEASURE POWER GAIN USED IN THE COMMON EMITTER CONFIGURATION	36	21	37	38	19
G 447	G3-20	DO YOU CALCULATE THE VOLTAGE GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE	15	14	15	16	9

TRANSISTOR AMPLIFIERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005
G 448	GJ-21 DO YOU CALCULATE THE CURRENT GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE	12	21	12	11	7
G 449	GJ-22 DO YOU CALCULATE THE POWER GAIN FOR A SPECIFIC TRANSISTOR USING A FORMULA THAT IS, DO YOU MULTIPLY THE	9	14	10	10	5
G 450	GJ-23 DO YOU NEED TO KNOW THAT MORE COLLECTOR CURRENT IS GENERATED WITH LESS COLLECTOR VOLTAGE AS TEMPERATURE	18	21	18	21	9
G 451	GJ-24 DO YOU COMPUTE THE STATIC OPERATING POINT [QJ] OF A TRANSISTOR AT DIFFERENT TEMPERATURES	5	14	4	5	0
G 452	GJ-25 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH	39	21	37	46	19
G 453	GJ-26 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH SELF-	39	21	38	44	19
G 454	GJ-27 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH	39	14	38	43	19
G 455	GJ-28 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH	39	21	40	44	16
G 456	GJ-29 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH	38	21	38	42	18
G 457	GJ-30 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH	33	21	32	38	14
G 458	GJ-31 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM EMITTER (SWAMPING) RESISTOR STABILIZATION	46	29	47	50	21
G 459	GJ-32 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM SELF-BIAS STABILIZATION	46	21	48	50	21
G 460	GJ-33 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THERMISTOR STABILIZATION	47	21	50	49	23
G 461	GJ-34 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM FORWARD BIAS DIODE STABILIZATION	46	36	49	48	19
G 462	GJ-35 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM REVERSE BIAS DIODE STABILIZATION	45	29	49	47	19
G 463	GJ-36 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM DOUBLE DIODE STABILIZATION	41	36	42	43	18
G 464	GJ-37 DO YOU IDENTIFY AMPLITUDE DISTORTION FOR TRANSISTOR CIRCUITS	61	50	62	64	30
G 465	GJ-38 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF AMPLITUDE DISTORTION	61	43	66	62	28

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	
G 466	G3-39 DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS	52	93	54	55	26	
G 467	G3-40 DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS	34	29	35	37	18	
G 468	G3-41 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF PHASE DISTORTION	33	29	34	34	16	
G 469	G3-42 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF FREQUENCY DISTORTION	50	29	52	54	25	
G 470	G3-43 DO YOU NEED TO KNOW THE DEGENERATIVE EFFECTS ON THE CIRCUIT CAUSED BY CHANGING EMITTER RESISTANCE FOR	27	21	27	31	12	
G 471	G3-44 DO YOU DETERMINE THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS	36	93	36	39	16	
G 472	G3-45 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	55	50	60	55	25	
G 473	G3-46 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	69	57	75	69	32	
G 474	G3-47 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY CIRCUITS	51	50	55	55	28	
G 475	G3-48 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	52	36	55	54	23	
G 476	G3-49 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	64	57	69	64	32	
H 477	H1-01 DO YOU USE OR REFER TO VARACTORS	48	93	39	59	54	
H 478	H1-02 DO YOU USE OR REFER TO TUNNEL DIODES	75	57	74	77	68	
H 479	H1-03 DO YOU USE OR REFER TO FIELD EFFECT TRANSISTORS (FET)	81	79	80	84	67	SOLID-STATE SPECIAL PURPOSE DEVICES
H 480	H1-04 DO YOU USE OR REFER TO UNIJUNCTION TRANSISTORS	71	57	70	76	65	
H 481	H1-05 DO YOU USE OR REFER TO ZENER DIODES	88	93	90	87	72	
H 482	H1-06 DO YOU USE OR REFER TO INTEGRATED CIRCUITS	85	86	86	86	75	
H 483	H2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH POWER SUPPLIES	79	93	86	77	33	
H 484	H2-02 DO YOU INSPECT POWER SUPPLIES	77	93	85	75	37	
H 485	H2-03 DO YOU CLEAN POWER SUPPLIES	64	71	73	60	19	
H 486	H2-04 DO YOU ALIGN OR ADJUST POWER SUPPLIES	77	100	85	75	28	
H 487	H2-05 DO YOU TROUBLESHOOT TO POWER SUPPLY CIRCUIT LEVEL	77	100	85	73	32	POWER SUPPLIES
H 488	H2-06 DO YOU TROUBLESHOOT TO POWER SUPPLY COMPONENTS	77	100	85	75	28	
H 489	H2-07 DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES	64	50	74	61	19	
H 490	H2-08 DO YOU REMOVE OR REPLACE POWER SUPPLY COMPONENTS	74	100	84	71	25	
H 491	H2-09 DO YOU WORK WITH HALF-WAVE RECTIFIERS	77	93	83	76	35	
H 492	H2-10 DO YOU WORK WITH FULL-WAVE RECTIFIERS OTHER THAN BRIDGE RECTIFIERS	76	86	83	74	32	
H 493	H2-11 DO YOU WORK WITH BRIDGE RECTIFIERS	75	86	82	75	32	
H 494	H2-12 DO YOU WORK WITH THREE-PHASE RECTIFIERS	26	21	26	26	19	
H 495	H2-13 DO YOU USE OR REFER TO INPUT VOLTAGE	79	86	84	79	37	
H 496	H2-14 DO YOU USE OR REFER TO INPUT FREQUENCY	69	71	73	70	33	
H 497	H2-15 DO YOU USE OR REFER TO PEAK OUTPUT VOLTAGE	66	71	71	66	30	
H 498	H2-16 DO YOU USE OR REFER TO AVERAGE OUTPUT VOLTAGE	67	50	70	70	35	
H 499	H2-17 DO YOU USE OR REFER TO RIPPLE AMPLITUDE	76	64	81	77	39	
H 500	H2-18 DO YOU USE OR REFER TO RIPPLE FREQUENCY	70	50	74	71	35	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005
H 501	H2-19 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE	51	57	51	55	30
H 502	H2-20 DO YOU USE OR REFER TO SHAPE OF OUTPUT WAVEFORMS	74	71	79	75	37
H 503	H2-21 DO YOU USE OR REFER TO EFFECTIVE OUTPUT VOLTAGE	72	71	76	72	39
H 504	H2-22 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE FILTERS	71	86	75	74	33
H 505	H2-23 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE FILTERS	66	64	68	70	33
H 506	H2-24 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE INPUT L-TYPE FILTERS	63	71	64	67	32
H 507	H2-25 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE INPUT L-TYPE FILTERS	61	64	62	65	30
H 508	H2-26 DO YOU WORK WITH CIRCUITS WHICH EMPLOY LC PI-TYPE FILTERS	61	57	61	65	30
H 509	H2-27 DO YOU WORK WITH CIRCUITS WHICH EMPLOY RC PI-TYPE FILTERS	63	64	64	68	32
H 510	H2-28 DO YOU WORK WITH CIRCUITS WHICH EMPLOY DON'T REMEMBER WHICH TYPE OF FILTER	19	50	25	13	2
H 511	H2-29 DO YOU HAVE THE OPTION OF REPLACING ONE TYPE OF FILTER WITH A DIFFERENT TYPE FILTER	10	7	13	8	5
H 512	H3-01 DO YOU WORK WITH OSCILLATORS IN YOUR PRESENT JOB	71	57	78	70	33
H 513	H3-02 DO YOU INSPECT OSCILLATORS	68	50	73	68	37
H 514	H3-03 DO YOU ALIGN OR ADJUST OSCILLATORS	66	50	74	66	24
H 515	H3-04 DO YOU REMOVE OR REPLACE COMPLETE OSCILLATORS	54	21	64	50	21
H 516	H3-05 DO YOU REMOVE OR REPLACE OSCILLATOR COMPONENTS	62	50	70	60	25
H 517	H3-06 DO YOU TROUBLESHOOT TO OSCILLATOR CIRCUIT LEVEL	65	50	73	62	32
H 518	H3-07 DO YOU TROUBLESHOOT TO OSCILLATOR COMPONENTS	65	50	72	63	33
H 519	H3-08 DO YOU USE OR REFER TO FEEDBACK	69	50	76	68	33
H 520	H3-09 DO YOU USE OR REFER TO FREQUENCY DETERMINING DEVICES (FDD)	64	43	68	65	32
H 521	H3-10 DO YOU USE OR REFER TO AMPLITUDE STABILITY	67	57	72	68	35
H 522	H3-11 DO YOU USE OR REFER TO FREQUENCY STABILITY	68	57	74	68	35
H 523	H3-12 DO YOU USE OR REFER TO DAMPING	51	43	56	50	28
H 524	H3-13 DO YOU USE OR REFER TO REGENERATIVE FEEDBACK	66	50	72	65	32
H 525	H3-14 DO YOU USE OR REFER TO PIEZOELECTRIC EFFECT	34	14	34	37	25
H 526	H3-15 DO YOU USE OR REFER TO CRITICAL DAMPING	33	21	36	32	19
H 527	H3-16 DO YOU USE OR REFER TO UNDER DAMPING	31	29	33	31	18
H 528	H3-17 DO YOU USE OR REFER TO OVER DAMPING	32	29	34	32	18
H 529	H3-18 DO YOU WORK WITH OSCILLATORS WHICH USE LC TANK CIRCUITS AS FDD	45	21	53	40	28
H 530	H3-19 DO YOU WORK WITH OSCILLATORS WHICH USE RC NETWORKS AS FDD	66	43	70	67	35
H 531	H3-20 DO YOU WORK WITH OSCILLATORS WHICH USE CRYSTALS AS FDD	65	50	69	67	35
H 532	H3-21 DO YOU WORK WITH OSCILLATORS WHICH USE DON'T REMEMBER WHICH TYPE OF FDD	10	14	13	7	2
H 533	H3-22 DO YOU WORK WITH SERIES HARTLEY SINUSOIDAL OSCILLATORS	51	43	52	54	30

OSCILLATORS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

			DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	
M	534	H3-23	DO YOU WORK WITH SHUNT HARTLEY SINUSOIDAL OSCILLATORS	49	36	51	51	26	
M	535	H3-24	DO YOU WORK WITH COLPITTS SINUSOIDAL OSCILLATORS	51	43	52	55	30	
M	536	H3-25	DO YOU WORK WITH CLAPP SINUSOIDAL OSCILLATORS	24	14	26	25	16	
M	537	H3-26	DO YOU WORK WITH BUTLER SINUSOIDAL OSCILLATORS	22	14	22	23	14	
M	538	H3-27	DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF OSCILLATORS	24	29	29	22	2	
I	539	I1-01	DO YOU WORK WITH MULTIVIBRATORS IN YOUR PRESENT JOB	63	43	69	64	26	
I	540	I1-02	DO YOU INSPECT WAVE GENERATING OR SHAPING CIRCUITS	64	43	68	65	33	
I	541	I1-03	DO YOU ALIGN OR ADJUST WAVE GENERATING OR SHAPING CIRCUITS	62	43	66	64	28	
I	542	I1-04	DO YOU CALIBRATE WAVE GENERATING OR SHAPING CIRCUITS	61	36	65	64	23	MULTIVIBRATORS
I	543	I1-05	DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUITS	63	36	68	64	30	
I	544	I1-06	DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUIT COMPONENTS	62	36	66	63	32	
I	545	I1-07	DO YOU REMOVE OR REPLACE COMPLETE WAVE GENERATING OR SHAPING CIRCUITS	49	29	55	49	19	
I	546	I1-08	DO YOU REMOVE OR REPLACE WAVE GENERATING OR SHAPING COMPONENTS	58	36	63	59	25	
I	547	I1-09	DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK CIRCUITS	53	36	58	52	28	
I	548	I1-10	DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN RC NETWORKS	61	43	63	64	32	
I	549	I1-11	DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN CRYSTALS	50	36	55	49	30	
I	550	I1-12	DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN DON'T REMEMBER WHICH TYPE OF FDD	12	21	14	11	2	
I	551	I1-13	DO YOU WORK WITH ASTABLE MULTIVIBRATORS	58	36	60	63	33	
I	552	I1-14	DO YOU WORK WITH MONOSTABLE MULTIVIBRATORS	59	36	60	63	33	
I	553	I1-15	DO YOU WORK WITH BISTABLE MULTIVIBRATORS	60	43	61	64	32	
I	554	I1-16	DO YOU WORK WITH DON'T REMEMBER WHICH TYPE MULTIVIBRATORS	9	21	12	7	0	
I	555	I2-01	DO YOU WORK WITH LIMITERS OR CLAMPERS IN YOUR PRESENT JOB	57	50	57	62	28	
I	556	I2-02	DO YOU WORK WITH SERIES DIODE LIMITERS	51	50	49	57	28	
I	557	I2-03	DO YOU WORK WITH SHUNT DIODE LIMITERS	50	36	47	58	24	
I	558	I2-04	DO YOU WORK WITH LIMITERS WITH BIAS	46	36	44	52	24	LIMITERS AND CLAMPERS
I	559	I2-05	DO YOU WORK WITH ZENER DIODE LIMITERS	52	50	51	58	30	
I	560	I2-06	DO YOU WORK WITH TRANSISTOR LIMITERS	48	29	48	53	24	
I	561	I2-07	DO YOU WORK WITH DON'T KNOW WHICH TYPE OF LIMITERS	9	21	10	9	0	
I	562	I2-08	DO YOU WORK WITH BASIC DIODE CLAMPING CIRCUITS	49	50	47	57	28	
I	563	I2-09	DO YOU WORK WITH DIODE CLAMPING CIRCUITS WITH BIAS	47	36	45	54	28	
I	564	I2-10	DO YOU WORK WITH DON'T KNOW WHICH TYPE OF CLAMPING CIRCUIT	11	21	13	9	0	
I	565	I3-01	IN YOUR PRESENT JOB, DO YOU WORK ON EQUIPMENT WHICH CONTAINS ELECTRON TUBES	81	100	89	78	35	
I	566	I3-02	DO YOU CHECK ELECTRON TUBES TO SEE IF THEY ARE GOOD	76	100	84	79	32	ELECTRON TUBES

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005
I	567	13-03 DO YOU USE TUBE TESTERS TO CHECK ELECTRON TUBES	75	93	83	73	32
I	568	13-04 DO YOU USE MULTIMETERS TO CHECK ELECTRON TUBES	52	64	55	53	21
I	569	13-05 DO YOU USE SCOPES TO CHECK ELECTRON TUBES	57	57	61	58	23
I	570	13-06 DO YOU USE SUBSTITUTION TO CHECK ELECTRON TUBES	77	100	86	73	37
I	571	13-07 DO YOU USE OR REFER TO CUTOFF	50	93	55	48	28
I	572	13-08 DO YOU USE OR REFER TO PEAK INVERSE VOLTAGE RATING	23	29	26	20	16
I	573	13-09 DO YOU USE OR REFER TO PEAK CURRENT RATING	25	93	29	22	16
I	574	13-10 DO YOU USE OR REFER TO TRANSIT TIME	20	21	23	17	11
I	575	13-11 DO YOU USE OR REFER TO PLATE DISSIPATION RATING	21	14	23	21	14
I	576	13-12 DO YOU USE OR REFER TO SATURATION	45	57	48	45	26
I	577	13-13 DO YOU USE OR REFER TO DC PLATE RESISTANCE	33	21	38	31	21
I	578	13-14 DO YOU COMPUTE ACTUAL VALUES OF THE DC PLATE RESISTANCE FOR ELECTRON TUBES	6	14	6	6	0
I	579	13-15 DO YOU USE OR REFER TO PLATE VOLTAGE	77	93	84	77	33
I	580	13-16 DO YOU USE OR REFER TO PLATE CURRENT	55	71	60	55	25
I	581	13-17 DO YOU USE OR REFER TO GRID VOLTAGE	76	93	83	75	33
I	582	13-18 DO YOU USE OR REFER TO GRID CURRENT	52	64	57	51	23
I	583	13-19 DO YOU USE OR REFER TO CATHODE VOLTAGE	76	93	83	75	33
I	584	13-20 DO YOU USE OR REFER TO CATHODE CURRENT	54	71	57	55	26
I	585	13-21 DO YOU USE OR REFER TO THE TRIODE AMPLIFICATION FACTOR (THE AMPLIFICATION FACTOR FOR TRIODES IS DEFINED AS	28	29	28	31	19
I	586	13-22 DO YOU CALCULATE ACTUAL VALUES OF TRIODE AMPLIFICATION FACTORS	10	14	11	12	2
I	587	13-23 DO YOU USE OR REFER TO MULTIGRID (TETRODE, PENTODE, ETC) AMPLIFICATION FACTORS	25	36	25	26	14
I	588	13-24 DO YOU USE OR REFER TO ELECTRON TUBE TRANSCONDUCTANCE (G, WHICH IS MEASURED IN MHOS)	13	21	12	15	11
I	589	13-25 DO YOU CALCULATE ACTUAL VALUES OF ELECTRON TUBE TRANSCONDUCTANCES	6	14	7	6	2
I	590	13-26 DO YOU USE OR REFER TO THE ELECTRON TUBE PARAMETER CALLED AC PLATE RESISTANCE	15	14	17	14	9
I	591	13-27 DO YOU CALCULATE ACTUAL VALUES OF AC PLATE RESISTANCE	7	14	7	7	2
I	592	13-28 DO YOU USE OR REFER TO ELECTRON TUBE INTERELECTRODE CAPACITANCE	33	36	30	39	25
I	593	13-29 DO YOU USE OR REFER TO CHARACTERISTIC CURVES IN YOUR WORK WITH ELECTRON TUBES	18	29	19	15	16
I	594	13-30 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE VOLTAGE FOR A SPECIFIED BIAS	14	14	16	11	11
I	595	13-31 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE CURRENT FOR A SPECIFIED BIAS	12	14	14	9	9
I	596	13-32 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR CUTOFF	18	21	20	16	11
I	597	13-33 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR SATURATION	16	21	19	15	9

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	
I	598	I3-34 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER GAIN	64	79	68	65	33	
I	599	I3-35 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER EFFICIENCY	32	57	40	23	16	
I	600	I3-36 DO YOU USE TEST TUBE CHECKERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	57	71	63	55	25	
I	601	I3-37 DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	44	36	52	39	18	
I	602	I3-38 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	60	43	62	64	28	
I	603	I3-39 DO YOU USE CHARACTERISTIC CURVES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	15	14	17	13	14	
I	604	I3-40 DO YOU CALCULATE ANY ELECTRON TUBE CAPACITANCES SUCH AS INPUT CAPACITANCE	6	21	7	5	0	
I	605	I3-41 DO YOU USE OR REFER TO TUBE SOCKET NOTATION	76	93	83	73	33	
I	606	I3-42 DO YOU USE OR REFER TO PIN NUMBERING SYSTEMS	79	100	86	76	37	
I	607	I3-43 DO YOU USE OR REFER TO THE TYPE OF MATERIAL OR THE OPERATING TEMPERATURE OF THE EMITTING SURFACE IN THE	7	14	7	8	2	
I	608	I3-44 DO YOU USE OR REFER TO TUBE SUBSTITUTION MATERIAL SUCH AS MANUALS OR CHARTS	71	86	78	69	37	
J	609	J1-01 DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS IN YOUR PRESENT JOB	74	71	80	75	33	
J	610	J1-02 DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER	35	50	39	34	16	ELECTRON TUBE AMPLIFIERS AND CIRCUITS
J	611	J1-03 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	56	64	59	54	26	
J	612	J1-04 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	66	71	70	66	33	
J	613	J1-05 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	48	43	52	49	21	
J	614	J1-06 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	59	71	63	59	25	
J	615	J1-07 DO YOU TROUBLESHOOT OR REPAIR DON'T KNOW WHICH TYPE OF AMPLIFIER	16	43	19	14	5	
J	616	J2-01 DO YOU WORK WITH GAS TUBES (HOT CATHODE OR COLD CATHODE)	69	86	72	72	37	
J	617	J2-02 DO YOU WORK WITH CATHODE-RAY TUBES	67	57	71	67	37	
J	618	J2-03 DO YOU USE OR REFER TO THE CHARACTERISTICS OF BEAM POWER TUBES	21	14	21	21	23	SPECIAL PURPOSE ELECTRON TUBES
J	619	J2-04 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH BEAM POWER TUBES ARE USED	36	36	33	41	25	
J	620	J2-05 DO YOU USE OR REFER TO THE CHARACTERISTICS OF THYRATRONS	30	29	29	32	32	
J	621	J2-06 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH THYRATRONS ARE USED	40	29	38	46	30	
J	622	J2-07 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTRON GUNS OF CATHODE-RAY TUBES (CRT)	48	43	47	51	39	
J	623	J2-08 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROMAGNETIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES	43	50	43	43	39	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	
J	624	J2-09 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES	49	50	45	55	42	
J	625	J2-10 DO YOU USE OR REFER TO PHOSPHOR SCREENS	53	43	55	53	39	
J	626	J2-11 DO YOU USE OR REFER TO AQUADAG COATINGS	38	36	34	43	37	
J	627	J2-12 DO YOU USE OR REFER TO ELECTRON OPTICS	16	14	16	18	11	
J	628	J2-13 DO YOU USE OR REFER TO PERSISTENCE	45	36	42	51	40	
J	629	J2-14 DO YOU USE OR REFER TO DECAY TIMES	37	36	39	35	26	
J	630	J2-15 DO YOU USE OR REFER TO FLUORESCENCE	32	29	32	33	26	
J	631	J2-16 DO YOU USE OR REFER TO PHOSPHORESCENCE	39	36	39	40	30	
J	632	J3-01 DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	39	29	41	42	16	
J	633	J3-02 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	38	14	40	41	16	
J	634	J3-03 DO YOU PERFORM TASKS ON FREQUENCY MIXERS	38	29	40	41	14	HETERODYNING, MODULATION, AND DEMODULATION
J	635	J3-04 DO YOU USE OR REFER TO THE HETERODYNING OF SIGNALS IN YOUR WORK WITH TRANSMIT OR RECEIVE SYSTEMS	34	14	33	40	18	
J	636	J3-05 DO YOU PERFORM TASKS ON REACTANCE MODULATORS	21	14	19	26	9	
J	637	J3-06 DO YOU PERFORM TASKS ON MODULATED OSCILLATORS	34	29	35	37	14	
K	638	K1-01 DO YOU WORK ON AM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	31	7	33	35	7	
K	639	K1-02 DO YOU INSPECT AM TRANSMIT OR RECEIVE SYSTEMS	31	0	32	35	9	
K	640	K1-03 DO YOU CLEAN AM TRANSMIT OR RECEIVE SYSTEMS	26	0	29	27	9	AM SYSTEMS
K	641	K1-04 DO YOU ALIGN OR ADJUST AM TRANSMIT OR RECEIVE SYSTEMS	30	0	32	33	9	
K	642	K1-05 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE SYSTEMS	30	0	31	32	9	
K	643	K1-06 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE COMPONENTS	30	0	32	33	9	
K	644	K1-07 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE SYSTEMS	25	0	28	25	9	
K	645	K1-08 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE COMPONENTS	29	0	31	32	9	
K	646	K1-09 DO YOU PERFORM TASKS ON RF OSCILLATORS	32	7	33	35	9	
K	647	K1-10 DO YOU PERFORM TASKS ON RF AMPLIFIERS	31	7	33	34	9	
K	648	K1-11 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	31	7	32	35	9	
K	649	K1-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS	30	7	30	35	9	
K	650	K1-13 DO YOU PERFORM TASKS ON LOCAL OSCILLATORS	31	7	32	35	9	
K	651	K1-14 DO YOU PERFORM TASKS ON IF AMPLIFIERS	31	7	32	35	9	
K	652	K1-15 DO YOU PERFORM TASKS ON DETECTORS	31	7	32	35	9	
K	653	K1-16 DO YOU PERFORM TASKS ON DON'T REMEMBER WHICH AM STAGE	3	7	3	4	0	
K	654	K1-17 DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN TRANSMITTERS	23	0	25	25	5	
K	655	K1-18 DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN TRANSMITTERS	25	0	27	27	7	
K	656	K1-19 DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS	30	7	30	34	9	
K	657	K1-20 DO YOU USE OR REFER TO SELECTIVITY OF RECEIVERS	27	7	27	32	9	
K	658	K1-21 DO YOU USE OR REFER TO 2ND HARMONIC DISTORTION	20	7	21	23	9	
K	659	K1-22 DO YOU USE OR REFER TO BANDPASS DISTORTION	22	7	24	23	9	
K	660	K1-23 DO YOU USE OR REFER TO SQUARE LAW DISTORTION	14	0	12	18	7	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	
K 661	K1-24 DO YOU USE OR REFER TO CO-CHANNEL INTERFERENCE	12	0	13	13	4	
K 662	K1-25 DO YOU USE OR REFER TO IMAGE FREQUENCIES IN RECEIVERS	14	0	13	18	5	
K 663	K1-26 DO YOU USE OR REFER TO SIGNAL TO IMAGE RATIOS OR IMAGE REJECTION RATIOS	14	0	14	17	5	
K 664	K1-27 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM TRANSMITTER SCHEMATIC DIAGRAMS	28	7	29	30	9	
K 665	K1-28 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM RECEIVER SCHEMATIC DIAGRAMS	29	7	30	33	9	
K 666	K2-01 DO YOU WORK WITH FM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	26	7	30	26	9	
K 667	K2-02 DO YOU INSPECT FM TRANSMIT OR RECEIVE SYSTEMS	25	7	27	25	7	
K 668	K2-03 DO YOU CLEAN FM TRANSMIT OR RECEIVE SYSTEMS	21	7	26	18	9	
K 669	K2-04 DO YOU ALIGN FM TRANSMIT OR RECEIVE SYSTEMS	24	7	27	23	9	FM SYSTEMS
K 670	K2-05 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE SYSTEMS	23	7	27	23	9	
K 671	K2-06 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE COMPONENTS	24	7	26	24	9	
K 672	K2-07 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE SYSTEMS	20	0	24	18	9	
K 673	K2-08 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE COMPONENTS	23	7	26	23	9	
K 674	K2-09 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	24	7	27	24	9	
K 675	K2-10 DO YOU PERFORM TASKS ON FREQUENCY MULTIPLIERS	24	7	26	24	9	
K 676	K2-11 DO YOU PERFORM TASKS ON DRIVERS (INTERMEDIATE AMPLIFIERS)	23	7	27	23	9	
K 677	K2-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS	24	7	26	25	9	
K 678	K2-13 DO YOU PERFORM TASKS ON RF AMPLIFIERS	24	7	27	25	9	
K 679	K2-14 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	24	7	27	25	9	
K 680	K2-15 DO YOU PERFORM TASKS ON IF AMPLIFIERS	25	7	28	25	9	
K 681	K2-16 DO YOU PERFORM TASKS ON LIMITERS	23	7	25	25	9	
K 682	K2-17 DO YOU PERFORM TASKS ON FREQUENCY DISCRIMINATORS	24	7	26	25	9	
K 683	K2-18 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSMITTERS	24	7	26	24	9	
K 684	K2-19 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM RECEIVERS	24	7	26	24	9	
K 685	K3-01 DO YOU CONVERT DECIMAL (BASE 10) NUMBERS TO OCTAL (BASE 8) NUMBERS	16	7	13	19	12	
K 686	K3-02 DO YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2) NUMBERS	33	36	32	35	26	
K 687	K3-03 DO YOU CONVERT OCTAL NUMBERS TO DECIMAL NUMBERS	14	7	13	17	11	NUMBERING SYSTEMS
K 688	K3-04 DO YOU CONVERT OCTAL NUMBERS TO BINARY NUMBERS	13	7	10	17	11	
K 689	K3-05 DO YOU CONVERT BINARY NUMBERS TO DECIMAL NUMBERS	32	21	31	35	25	
K 690	K3-06 DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS	13	7	11	17	11	
K 691	K3-07 DO YOU ADD BINARY NUMBERS TO GET A SUM	25	21	26	25	16	
K 692	K3-08 DO YOU SUBRRACT BINARY NUMBERS USING THE END-AROUND-CARRY METHOD	13	7	15	13	7	
K 693	K3-09 DO YOU SUBTRACT BINARY NUMBERS USING THE DIRECT SUBTRACTION METHOD	18	14	19	18	11	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	Dy-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	
K 694	K3-10 DO YOU ADD OCTAL NUMBERS TO GET A SUM	10	7	9	11	5	
L 695	L1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO LOGIC FUNCTIONS	43	21	43	48	19	
L 696	L1-02 DO YOU CONSTRUCT TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES	20	14	23	18	5	
L 697	L1-03 DO YOU CONSTRUCT TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES	20	14	23	18	5	LOGIC FUNCTIONS
L 698	L1-04 DO YOU CONSTRUCT TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS	19	14	23	18	5	
L 699	L1-05 DO YOU CONSTRUCT TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS OR GATES	19	14	22	18	5	
L 700	L1-06 DO YOU USE OR REFER TO TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES	36	21	36	42	16	
L 701	K1-07 DO YOU USE OR REFER TO TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES	36	21	35	42	16	
L 702	K1-08 DO YOU USE OR REFER TO TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS	36	21	35	41	18	
L 703	L1-09 DO YOU USE OR REFER TO TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS	34	14	34	38	14	
L 704	L1-10 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR AND GATES	42	21	42	47	21	
L 705	L1-11 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR OR GATES	43	21	43	47	21	
L 706	L1-12 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR NAND OR NOR GATES	43	21	43	48	21	
L 707	L1-13 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR EXCLUSIVE OR GATES	40	14	40	44	19	
L 708	L2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO BOOLEAN EQUATIONS, LOGIC DIAGRAMS, OR LOGIC	27	7	26	32	16	
L 709	L2-02 DO YOU DRAW LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUITS	10	0	10	10	9	
L 710	L2-03 DO YOU CONSTRUCT TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS	6	0	6	6	5	BOOLEAN EQUATIONS
L 711	L2-04 DO YOU DRAW LOGIC DIAGRAMS FROM GIVEN BOOLEAN EQUATIONS	7	0	8	7	5	
L 712	L2-05 DO YOU MEASURE INPUTS OR OUTPUTS OF LOGIC GATES	26	7	26	29	12	
L 713	L2-06 DO YOU DEVELOP OR ANALYZE BOOLEAN EQUATIONS IN THE PROCESS OF TROUBLESHOOTING DIGITAL CIRCUITS	10	7	10	11	9	
L 714	L2-07 DO YOU ANALYZE LOGIC CIRCUITS BY USING BOOLEAN ALGEBRA	11	7	12	11	5	
L 715	L2-08 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUIT GATES	21	7	18	24	19	
L 716	L2-09 DO YOU USE OR REFER TO TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS	11	7	10	14	9	
L 717	L2-10 DO YOU USE OR REFER TO LOGIC DIAGRAMS CONSISTING OF MORE THAN ONE GATE	27	7	26	31	19	
L 718	L2-11 DO YOU COMPUTE SUM AND CARRY EXPRESSIONS FOR SERIAL HALF OR FULL ADDER LOGIC DIAGRAMS	7	7	8	6	5	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	
L 719	L2-12 DO YOU TRACE DATA FLOW THROUGH PARALLEL FULL ADDER LOGIC DIAGRAMS	12	7	13	12	7	
L 720	L2-13 DO YOU WORK WITH ASTABLE (FREE RUNNING) MULTIVIBRATORS	29	14	29	34	12	
L 721	L2-14 DO YOU WORK WITH BISTABLE (FLIP-FLOP) MULTIVIBRATORS	30	14	30	33	16	
L 722	L2-15 DO YOU WORK WITH MONOSTABLE (ONE-SHOT) MULTIVIBRATORS	30	14	29	34	16	
L 723	L2-16 DO YOU USE OR REFER TO FLIP-FLOP MULTIVIBRATOR SYMBOLS	29	14	29	32	16	
L 724	L2-17 DO YOU USE OR REFER TO SINGLE-SHOT MULTIVIBRATOR SYMBOLS	29	14	29	32	18	
L 725	L2-18 DO YOU USE OR REFER TO FLIP-FLOP CIRCUIT DIAGRAMS	29	14	29	32	18	
L 726	L2-19 DO YOU USE OR REFER TO FLIP-FLOP TRUTH TABLES	25	14	26	24	14	
L 727	L2-20 DO YOU USE OR REFER TO COMPLEMENTED FLIP-FLOP LOGIC SYMBOLS	22	7	23	23	12	
L 728	L2-21 DO YOU USE OR REFER TO COMPLEMENTING FLIP-FLOP LOGIC SYMBOLS	22	7	23	22	14	
L 729	L2-22 DO YOU MEASURE OUTPUT WAVESHAPES OF LOGIC CIRCUITS	29	14	29	32	16	
L 730	L2-23 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTED FLIP-FLOP SCHEMATIC DIAGRAMS	23	14	24	25	16	
L 731	L2-24 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTING FLIP-FLOP SCHEMATIC DIAGRAMS	23	14	24	25	16	
L 732	L2-25 DO YOU CONSTRUCT TRUTH TABLES FOR J-K FLIP-FLOP LOGIC SYMBOLS	13	14	15	12	5	
L 733	L3-01 DO YOU WORK WITH DIGITAL COUNTERS IN YOUR PRESENT JOB	54	36	58	55	28	
L 734	L3-02 DO YOU USE OR REFER TO UP-COUNTERS	30	21	31	32	14	
L 735	L3-03 DO YOU USE OR REFER TO DOWN-COUNTERS	27	29	28	28	12	
L 736	L3-04 DO YOU USE OR REFER TO SERIAL COUNTERS	21	7	23	22	9	
L 737	L3-05 DO YOU USE OR REFER TO PARALLEL COUNTERS	20	14	22	20	7	COUNTERS
L 738	L3-06 DO YOU USE OR REFER TO RING COUNTERS	20	7	19	24	9	
L 739	L3-07 DO YOU USE OR REFER TO DECADE COUNTERS	46	29	46	50	30	
L 740	L3-08 DO YOU USE OR REFER TO COUNT DETECT CIRCUITS	26	21	26	28	9	
L 741	L3-09 DO YOU USE OR REFER TO DOWN CLOCKS	24	14	26	23	11	
L 742	L3-10 DO YOU USE OR REFER TO UP CLOCKS	24	14	27	29	11	
L 743	L3-11 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	23	14	24	23	12	
L 744	L3-12 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-	19	7	20	20	9	
L 745	L3-13 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF DECADE COUNTERS	39	21	37	44	25	
L 746	L3-14 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF RING COUNTERS	18	7	17	22	11	
L 747	L3-15 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER	17	0	19	17	9	
L 748	L3-16 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	20	0	21	22	11	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	
L	749	L3-17 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF COUNTERS	23	0	22	26	11	
L	750	L3-18 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	17	14	18	18	5	
L	751	L3-19 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENT-	14	14	15	14	5	
L	752	L3-20 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE	13	0	14	13	5	
L	753	L3-21 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR OTHER TYPES OF COUNTERS	17	7	18	19	5	
L	754	L3-22 DO YOU CONSTRUCT TRUTH TABLES FROM LOGIC DIAGRAMS OF DECADE COUNTERS	12	14	14	13	2	
L	755	L3-23 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP IN RING COUNTERS FOR SPECIFIC INPUT PULSES	15	7	17	15	5	
L	756	L3-24 DO YOU DETERMINE THE APPROPRIATE AND GATE NECESSARY IN COUNT DETECT CIRCUITS TO INDICATE A REQUIRED COUNT	22	21	24	23	5	
M	757	M1-01 DO YOU WORK WITH SAWTOOTH WAVE GENERATORS	66	50	67	72	37	
M	758	M1-02 DO YOU WORK WITH TRAPEZOIDAL WAVE GENERATORS	31	21	29	34	26	
M	759	M1-03 DO YOU WORK WITH PULSED OSCILLATORS WITH REGENERATIVE FEEDBACK	54	36	57	55	25	
M	760	M1-04 DO YOU WORK WITH PULSED OSCILLATORS WITHOUT REGENERATIVE FEEDBACK	50	29	55	50	23	TIMING CIRCUITS
M	761	M1-05 DO YOU WORK WITH BLOCKING OSCILLATORS	54	36	53	61	32	
M	762	M1-06 DO YOU USE OR REFER TO RISE TIME	79	64	78	84	72	
M	763	M1-07 DO YOU USE OR REFER TO FALL OR FLYBACK TIME	73	50	71	78	67	
M	764	M1-08 DO YOU USE OR REFER TO SWEEP TIME	78	57	76	83	70	
M	765	M1-09 DO YOU USE OR REFER TO ELECTRICAL LENGTH OF SAWTOOTH WAVEFORMS	62	29	57	70	60	
M	766	M1-10 DO YOU USE OR REFER TO PHYSICAL LENGTH OF SAWTOOTH WAVEFORMS	54	29	54	57	47	
M	767	M1-11 DO YOU USE OR REFER TO LINEAR SLOPE OF SAWTOOTH WAVEFORMS	63	36	58	71	63	
M	768	M1-12 DO YOU USE OR REFER TO GATE LENGTH OF SAWTOOTH WAVEFORMS	58	36	54	65	58	
M	769	M2-01 DO YOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB	79	86	85	78	39	
M	770	M2-02 DO YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL GENERATORS	75	71	81	74	40	
M	771	M2-03 DO YOU PERFORM PERIODIC MAINTENANCE SUCH AS ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL	67	57	74	67	30	USE OF SIGNAL GENERATORS
M	772	M2-04 DO YOU TROUBLESHOOT TO AN ASSEMBLY OR SUBASSEMBLY WHILE USING SIGNAL GENERATORS	65	57	71	62	35	
M	773	M2-05 DO YOU TROUBLESHOOT TO THE SMALLEST REPLACEABLE COMPONENT WHILE USING SIGNAL GENERATORS	64	57	71	61	37	
M	774	M2-06 DO YOU USE AUDIO SINE-WAVE GENERATORS	79	86	85	78	39	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	
N	775	M2-07 DO YOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH AS SQUARE WAVE, TRIANGLE, PULSE, OR SPIKE	74	79	79	73	40	
N	776	M2-08 DO YOU USE RF GENERATORS LESS THAN 1,000 MH	74	79	80	73	37	
N	777	M2-09 DO YOU USE RF GENERATORS GREATER THAN 1,000 MH	65	64	68	66	39	
N	778	M2-10 DO YOU USE OTHER SPECIAL PURPOSE OR MULTI-FUNCTION GENERATORS	68	71	71	70	40	
N	779	M3-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS OR	37	29	37	41	21	
N	780	M3-02 DO YOU INSPECT MOTORS	36	14	36	40	18	
N	781	M3-03 DO YOU CLEAN OR LUBRICATE MOTORS	34	14	34	38	16	
N	782	M3-04 DO YOU OPERATE MOTORS	34	14	35	37	18	MOTORS AND GENERATORS
N	783	M3-05 DO YOU REMOVE OR REPLACE COMPLETE MOTORS	35	14	36	39	16	
N	784	M3-06 DO YOU REMOVE OR REPLACE MOTOR PARTS	20	7	20	23	9	
N	785	M3-07 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF MOTORS	35	14	35	39	14	
N	786	M3-08 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS	15	7	14	17	11	
N	787	M3-09 DO YOU PERFORM ANY TASKS ON FIELD COILS	11	7	11	12	4	
N	788	M3-10 DO YOU PERFORM ANY TASKS ON ARMATURES	12	7	12	14	5	
N	789	M3-11 DO YOU PERFORM ANY TASKS ON ROTORS	12	7	12	14	5	
N	790	M3-12 DO YOU PERFORM ANY TASKS ON BRUSHES	21	7	19	24	16	
N	791	M3-13 DO YOU PERFORM ANY TASKS ON SLIP RINGS	13	7	12	15	7	
N	792	M3-14 DO YOU PERFORM ANY TASKS ON COMMUTATORS	13	7	12	15	9	
N	793	M3-15 DO YOU PERFORM ANY TASKS ON POLE PIECES	9	7	10	10	5	
N	794	M3-16 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OF THE FORCE OR TORQUE CREATED BY A MOTOR	5	7	5	5	0	
N	795	M3-17 DO YOU DETERMINE OR MEASURE THE DIRECTION OF THE MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR	7	7	7	9	4	
N	796	M3-18 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OR DIRECTION OF THE INDUCED VOLTAGE IN MOTORS	5	0	5	5	2	
N	797	M3-19 DO YOU WORK WITH SYNCHRONOUS MOTORS	26	14	22	34	16	
N	798	M3-20 DO YOU WORK WITH INDUCTION MOTORS	24	14	19	32	16	
N	799	M3-21 DO YOU WORK WITH SPLIT-PHASE MOTORS	16	7	13	21	14	
N	800	M3-22 DO YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS	23	7	21	27	14	
N	801	M3-23 DO YOU INSPECT GENERATORS	25	7	23	29	16	
N	802	M3-24 DO YOU CLEAN OR LUBRICATE GENERATORS	21	7	21	23	12	
N	803	M3-25 DO YOU OPERATE GENERATORS	25	14	24	28	14	
N	804	M3-26 DO YOU REMOVE OR REPLACE COMPLETE GENERATORS	19	0	19	23	9	
N	805	M3-27 DO YOU REMOVE OR REPLACE GENERATOR PARTS	14	7	14	15	7	
N	806	M3-28 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF GENERATORS	21	0	21	24	12	
N	807	M3-29 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF GENERATORS	13	0	14	14	7	
N	808	N1-01 DO YOU WORK WITH METERS IN YOUR PRESENT JOB	74	86	79	75	35	
N	809	N1-02 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF PERMANENT MAGNETS	95	64	96	95	26	
N	810	N1-03 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF MOVING COILS	94	64	97	96	26	METER MOVEMENTS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	
N 811	N1-04 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF SPIRAL SPRINGS	44	50	46	46	23	
N 812	N1-05 DO YOU READ METER SCALES	74	86	80	74	39	
N 813	N1-06 DO YOU EXTEND THE RANGE OF AMMETERS	48	71	53	44	23	
N 814	N1-07 DO YOU ZERO OHMMETERS	73	86	79	72	37	
N 815	N1-08 DO YOU ZERO AMMETERS	63	86	67	62	32	
N 816	N1-09 DO YOU EXTEND THE RANGE OF VOLTMETERS	54	86	58	53	23	
N 817	N1-10 DO YOU USE OR REFER TO VOLTMETER SENSITIVITY (EXPRESSED IN UNITS OF OHMS PER VOLT)	66	79	71	65	37	
N 818	N2-01 DO YOU WORK WITH SATURABLE REACTORS OR MAGNETIC AMPLIFIERS IN YOUR PRESENT JOB	7	0	6	8	7	
N 819	N2-02 DO YOU INSPECT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	6	0	5	8	5	
N 820	N2-03 DO YOU CLEAN MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	5	0	4	6	0	SATURABLE REACTORS AND MAGNETIC AMPLIFIERS
N 821	N2-04 DO YOU ADJUST MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	5	0	4	7	2	
N 822	N2-05 DO YOU TROUBLESHOOT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	6	0	5	8	5	
N 823	N2-06 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	6	0	5	7	5	
N 824	N2-07 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIER OR SATURABLE REACTOR COMPONENTS	4	0	4	5	2	
N 825	N2-08 DO YOU USE OR REFER TO HYSTERESIS CURVES OR LOOPS	3	0	2	4	4	
N 826	N2-09 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF	5	0	4	5	5	
N 827	N2-10 DO YOU MEASURE OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE	6	0	5	7	5	
N 828	N2-11 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS FOR MAGNETIC AMPLIFIERS	5	0	4	6	5	
N 829	N2-12 DO YOU USE OR REFER TO COERCIVE FORCE IN SATURABLE REACTORS	2	0	2	2	5	
N 830	N2-13 DO YOU USE OR REFER TO RESIDUAL MAGNETISM IN SATURABLE REACTORS	3	0	2	3	5	
N 831	N2-14 DO YOU USE OR REFER TO FLUX DENSITY IN SATURABLE REACTORS	2	0	1	2	5	
N 832	N2-15 DO YOU USE OR REFER TO POINT OF SATURATION IN SATURABLE REACTORS	3	0	1	5	5	
N 833	N2-16 DO YOU USE OR REFER TO SATURABLE REACTOR SCHEMATIC SYMBOLS	5	0	4	7	7	
N 834	N3-01 DO YOU WORK WITH WAVESHAPING CIRCUITS IN YOUR PRESENT JOB	62	29	63	68	30	
N 835	N3-02 DO YOU USE OR REFER TO TRANSIENT INTERVALS	36	14	36	40	19	
N 836	N3-03 DO YOU USE OR REFER TO PULSE WIDTH (PW)	61	29	61	67	30	
N 837	N3-04 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)	57	29	57	63	28	WAVESHAPING CIRCUITS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005
N	838	N3-05 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)	59	29	58	66	28
N	839	N3-06 DO YOU USE OR REFER TO DIFFERENTIATING CIRCUITS	54	29	53	61	30
N	840	N3-07 DO YOU USE OR REFER TO INTEGRATING CIRCUITS	55	29	55	61	26
N	841	N3-08 DO YOU USE OR REFER TO THE CLASSIFICATION OF TIME CONSTANTS (TC) AS LONG, MEDIUM, OR SHORT	45	21	47	49	19
N	842	N3-09 DO YOU DETERMINE WHETHER AN LR OR RC CIRCUIT IS DIFFERENTIATING OR INTEGRATING BASED ON THE TIME CONSTANT	34	21	32	41	14
N	843	N3-10 DO YOU WORK WITH SQUARE WAVE GENERATORS	60	29	61	64	30
N	844	N3-11 DO YOU WORK WITH RECTANGULAR WAVE GENERATORS	55	29	55	59	32
O	845	01-01 DO YOU WORK ON SINGLE SIDEBAND SYSTEMS IN YOUR PRESENT JOB	5	0	6	5	0
O	846	01-02 DO YOU INSPECT SSB TRANSMIT OR RECEIVE SYSTEMS	4	0	5	5	2
O	847	01-03 DO YOU CLEAN SSB TRANSMIT OR RECEIVE SYSTEMS	4	0	4	5	2
O	848	01-04 DO YOU ALIGN SSB TRANSMIT OR RECEIVE SYSTEMS	4	0	5	5	0
O	849	01-05 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE SYSTEMS	4	0	5	5	0
O	850	01-06 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE COMPONENTS	4	0	5	5	0
O	851	01-07 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE SYSTEMS	4	0	4	4	0
O	852	01-08 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE COMPONENTS	4	0	4	5	0
O	853	01-09 DO YOU PERFORM TASKS ON SSB AUDIO AMPLIFIERS	5	0	5	5	0
O	854	01-10 DO YOU PERFORM TASKS ON SSB BALANCED MODULATORS	4	0	4	5	0
O	855	01-11 DO YOU PERFORM TASKS ON SSB CARRIER OSCILLATORS	5	0	5	5	2
O	856	01-12 DO YOU PERFORM TASKS ON SSB LC FILTERS	5	0	5	5	0
O	857	01-13 DO YOU PERFORM TASKS ON SSB CRYSTAL FILTERS	5	0	5	5	0
O	858	01-14 DO YOU PERFORM TASKS ON SSB MECHANICAL FILTERS	4	0	4	4	2
O	859	01-15 DO YOU PERFORM TASKS ON SSB OSCILLATORS	5	0	5	5	2
O	860	01-16 DO YOU PERFORM TASKS ON SSB MIXERS	5	0	6	5	0
O	861	01-17 DO YOU PERFORM TASKS ON SSB DRIVERS	5	0	5	5	2
O	862	01-18 DO YOU PERFORM TASKS ON SSB POWER AMPLIFIERS	4	0	5	5	0
O	863	01-19 DO YOU PERFORM TASKS ON SSB RF AMPLIFIERS	5	0	5	5	2
O	864	01-20 DO YOU PERFORM TASKS ON SSB FREQUENCY CONVERTERS	5	0	5	5	2
O	865	01-21 DO YOU PERFORM TASKS ON SSB IF AMPLIFIERS	5	0	5	5	0
O	866	01-22 DO YOU PERFORM TASKS ON SSB DEMODULATORS	5	0	5	5	2
O	867	01-23 DO YOU PERFORM TASKS ON SSB DON'T REMEMBER WHICH SSB SYSTEM STAGES	1	0	1	1	2
O	868	01-24 DO YOU USE OR REFER TO SELECTIVE FADING	2	0	2	2	0
O	869	01-25 DO YOU USE OR REFER TO PEAK POWER	5	0	5	5	2
O	870	01-26 DO YOU USE OR REFER TO FREQUENCY STABILITY	4	0	5	5	0
O	871	01-27 DO YOU USE OR REFER TO RESPONSE CURVES FOR BANDWIDTH FILTERS	4	0	4	5	2
O	872	01-28 DO YOU CALCULATE PEAK POWER OR EFFECTIVE POWER OF SSB TRANSMITTERS	3	0	3	3	2

SINGLE SIDEBAND SYSTEMS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

PULSE MODULATION SYSTEMS

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005
0 873	01-29 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB TRANSMITTER SCHEMATIC DIAGRAMS	4	0	5	4	2
0 874	01-30 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB RECEIVER SCHEMATIC DIAGRAMS	4	0	5	5	0
0 875	02-01 DO YOU WORK ON PULSE MODULATION SYSTEMS IN YOUR PRESENT JOB	34	7	34	37	18
0 876	02-02 DO YOU INSPECT PULSE MODULATION SYSTEMS	33	7	33	37	19
0 877	02-03 DO YOU CLEAN PULSE MODULATION SYSTEMS	27	7	28	29	9
0 878	02-04 DO YOU ALIGN PULSE MODULATION SYSTEMS	32	7	33	35	12
0 879	02-05 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS	32	7	33	36	12
0 880	02-06 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEM COMPONENTS	32	7	33	35	14
0 881	02-07 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS	27	7	28	29	9
0 882	02-08 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEM COMPONENTS	31	7	33	34	11
0 883	02-09 DO YOU WORK ON PULSE-AMPLITUDE MODULATION (PAM) SYSTEMS	28	7	27	33	14
0 884	02-10 DO YOU WORK ON PULSE-DURATION MODULATION (PDM) SYSTEMS	23	7	22	27	9
0 885	02-11 DO YOU WORK ON PULSE-POSITION MODULATION (PPM) SYSTEMS	23	7	23	26	9
0 886	02-12 DO YOU WORK ON PULSE-CODE MODULATION (PCM) SYSTEMS	21	7	19	26	5
0 887	02-13 DO YOU WORK ON LINE PULSING MODULATION SYSTEMS	12	7	13	13	2
0 888	02-14 DO YOU WORK ON DON'T REMEMBER WHICH TYPE OF MODULATION SYSTEM	7	7	8	7	0
0 889	02-15 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER SUPPLIES	29	7	28	35	11
0 890	02-16 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM CHARGING CHOKES AND CHARGING DIODES	19	7	18	23	7
0 891	02-17 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE FORMING NETWORKS	30	7	30	35	11
0 892	02-18 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TIMERS	26	7	25	31	11
0 893	02-19 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM SWITCHES SUCH AS GAS THYRATRONS	22	0	18	28	12
0 894	02-20 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE TRANSFORMERS	25	0	22	32	14
0 895	02-21 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TRANSMITTER TUBES	24	0	24	28	9
0 896	02-22 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM RF AMPLIFIERS	31	7	31	35	14
0 897	02-23 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM FREQUENCY CONVERTERS	30	7	30	34	14
0 898	02-24 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM IF AMPLIFIERS	30	7	30	34	14
0 899	02-25 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DETECTORS	31	7	31	35	14

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005
0 900	02-26 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM VIDEO AMPLIFIERS	30	7	28	35	14
0 901	02-27 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER VIDEO AMPLIFIERS	23	0	22	28	12
0 902	02-28 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DON'T REMEMBER WHICH PULSE MODULATION SYSTEM STAGES	5	7	5	5	2
0 903	02-29 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)	34	7	34	39	18
0 904	02-30 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)	32	7	31	36	18
0 905	02-31 DO YOU USE OR REFER TO PULSE WIDTH (PW)	35	7	35	39	18
0 906	02-32 DO YOU USE OR REFER TO PULSE SHAPE	34	7	34	38	18
0 907	02-33 DO YOU USE OR REFER TO PEAK POWER	32	7	31	36	18
0 908	02-34 DO YOU USE OR REFER TO AVERAGE POWER	30	7	30	33	18
0 909	02-35 DO YOU CALCULATE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)	26	0	26	30	9
0 910	02-36 DO YOU MEASURE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)	32	0	32	38	14
0 911	02-37 DO YOU USE FORMULAS TO CALCULATE AVERAGE POWER OR PEAK POWER OF PULSE MODULATION TRANSMIT SYSTEMS	24	0	23	29	9
0 912	02-38 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION TRANSMITTER SCHEMATIC DIAGRAMS	29	7	28	33	12
0 913	02-39 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION RECEIVER SCHEMATIC DIAGRAMS	26	7	27	30	11
0 914	03-01 DO YOU WORK WITH ANTENNAS IN YOUR PRESENT JOB	8	7	9	6	7
0 915	03-02 DO YOU INSPECT ANTENNAS	7	7	9	5	5
0 916	03-03 DO YOU CLEAN ANTENNAS	5	7	6	5	2
0 917	03-04 DO YOU PHYSICALLY ALIGN ANTENNAS	4	0	5	4	4
0 918	03-05 DO YOU ELECTRICALLY ALIGN ANTENNAS	4	0	5	4	4
0 919	03-06 DO YOU TROUBLESHOOT TO ANTENNAS	6	7	7	5	4
0 920	03-07 DO YOU TROUBLESHOOT TO ANTENNA COMPONENTS	4	0	4	5	2
0 921	03-08 DO YOU REMOVE OR INSTALL ANTENNAS	5	0	6	5	4
0 922	03-09 DO YOU REMOVE OR REPLACE COMPONENTS OF ANTENNAS	4	0	4	5	2
0 923	03-10 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF E OR ELECTRIC FIELD LINES	3	0	3	3	4
0 924	03-11 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF H OR MAGNETIC FIELD LINES	3	0	2	4	4
0 925	03-12 DO YOU DETERMINE THE DIRECTION OF THE MAGNETIC LINES IN RELATION TO THE ELECTRIC LINES OF FORCE FOR ANTENNAS	2	0	2	3	4
0 926	03-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE OF CORRECT LENGTH (HALF-WAVE) ACT AS	3	0	3	3	4
0 927	03-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE LONGER THAN A HALF-WAVE ACT AS INDUCTIVE LOADS	3	0	3	3	4
0 928	03-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE SHORTER THAN A HALF-WAVE ACT AS CAPACITIVE LOADS	3	0	3	3	4

ANTENNAS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005
O	929	03-16 DO YOU WORK WITH HERTZ ANTENNAS	3	0	3	3	4
O	930	03-17 DO YOU WORK WITH MARCONI ANTENNAS	2	0	2	2	2
O	931	03-18 DO YOU WORK WITH BROADSIDE ARRAYS	2	0	1	2	4
O	932	03-19 DO YOU WORK WITH END-FIRE ARRAYS	2	0	1	2	4
O	933	03-20 DO YOU WORK WITH CARDIOID ARRAYS	1	0	1	2	0
O	934	03-21 DO YOU WORK WITH COLLINEAR ARRAYS	1	0	1	1	0
O	935	03-22 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC INDUCTION FIELDS WHEN WORKING WITH ANTENNAS	2	0	2	3	2
O	936	03-23 DO YOU MEASURE ELECTROMAGNETIC INDUCTION FIELDS OF ANTENNAS	2	0	1	3	2
O	937	03-24 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC RADIATION FIELDS WHEN WORKING WITH ANTENNAS	2	0	2	3	4
O	938	03-25 DO YOU MEASURE ELECTROMAGNETIC RADIATION FIELDS OF ANTENNAS	1	0	1	2	2
O	939	03-26 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA RADIATION	1	0	1	2	0
O	940	03-27 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA INDUCTION FIELD	1	0	1	2	0
O	941	03-28 ARE ANY OF THE ANTENNAS YOU WORK ON LINEARLY POLARIZED	2	0	1	3	2
O	942	03-29 ARE ANY OF THE ANTENNAS YOU WORK ON CIRCULARLY POLARIZED	2	0	1	2	4
O	943	03-30 DO YOU MEASURE OR DETERMINE THE POLARITY OF ANTENNAS YOU WORK ON	2	0	1	2	0
O	944	03-31 DO YOU CONSTRUCT, OR MAKE THE CALCULATIONS NECESSARY TO CONSTRUCT, ANTENNAS OF CORRECT LENGTH FOR	2	0	3	2	4
O	945	03-32 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS	1	0	1	2	0
O	946	03-33 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS DIRECTORS	1	0	1	2	0
O	947	03-34 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS REFLECTORS	1	0	1	2	0
O	948	03-35 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN DON'T REMEMBER WHAT KIND OF ELEMENTS	2	0	3	1	2
O	949	03-36 DO YOU WORK ON UNIDIRECTIONAL ANTENNAS	4	0	4	3	7
O	850	03-37 DO YOU WORK ON BIDIRECTIONAL ANTENNAS	3	0	4	2	4
O	851	03-38 DO YOU WORK ON DON'T REMEMBER THE DIRECTIONALITY	2	7	2	1	0
O	852	03-39 DO YOU WORK WITH ROTAR ANTENNA ARRAYS	2	0	2	1	0
P	953	P1-01 IN YOUR PRESENT JOB DO YOU WORK WITH TRANSMISSION LINES (TRANSMISSION LINES ARE DEFINED TO INCLUDE LEADS	16	0	13	22	4
P	954	P1-02 DO YOU REFER TO OR USE COPPER LOSS OR I2R LOSS IN TRANSMISSION LINES	7	0	5	11	2
P	955	P1-03 DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY CURRENTS IN TRANSMISSION LINES	9	0	6	14	4

TRANSMISSION LINES

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005
P 956	P1-04 DO YOU REFER TO OR USE RADIATION LOSS IN TRANSMISSION LINES	10	0	8	13	4
P 957	P1-05 DO YOU USE OR REFER TO DIELECTRIC LOSS IN TRANSMISSION LINES	8	7	6	12	4
P 958	P1-06 DO YOU USE OR REFER TO LEAKAGE LOSSES IN TRANSMISSION LINES	10	0	9	14	4
P 959	P1-07 DO YOU WORK WITH TWISTED PAIR TRANSMISSION LINES	9	0	8	12	2
P 960	P1-08 DO YOU WORK WITH TWIN LEAD TRANSMISSION LINES	10	7	9	12	2
P 961	P1-09 DO YOU WORK WITH OPEN TWO-WIRE TRANSMISSION LINES	8	0	8	11	2
P 962	P1-10 DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION LINES	16	7	14	22	4
P 963	P1-11 DO YOU WORK WITH RIGID COAXIAL CABLE TRANSMISSION LINES	14	7	12	17	4
P 964	P1-12 DO YOU TROUBLESHOOT TRANSMISSION LINES	11	0	10	14	2
P 965	P1-13 DO YOU ANALYZE VOLTAGE OR CURRENT WAVEFORMS IN TRANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION	7	7	7	9	2
P 966	P1-14 DO YOU SELECT APPROPRIATE TRANSMISSION LINES TERMINATIONS TO ACHIEVE DESIRED WAVEFORMS	14	7	11	19	2
P 967	P1-15 DO YOU USE OR REFER TO SCHEMATIC SYMBOLS FOR LINE TERMINATIONS IN TERMS OF CIRCUIT TERMINATIONS	13	7	11	18	4
P 968	P1-16 DO YOU MEASURE STANDING WAVE RATIOS (SR) OF TRANSMISSION LINES	13	0	12	18	2
P 969	P1-17 DO YOU CALCULATE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES	11	7	10	14	2
P 970	P1-18 DO YOU PERFORM THE CALCULATIONS NECESSARY TO DETERMINE THE IMPEDANCE AND LENGTH OF QUARTER - WAVELENGTH	7	7	6	9	2
P 971	P1-19 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING MATCHING TRANSFORMERS	10	7	9	14	2
P 972	P1-20 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING DELTA MATCHING	5	7	6	5	0
P 973	P1-21 DO YOU SELECT THE TYPE OF TRANSMISSION LINE NEEDED FOR PARTICULAR JOBS WITHOUT REFERRING TO TECHNICAL DATA	7	7	6	9	0
P 974	P1-22 DO YOU USE OR REFER TO THE TERM CHARACTERISTIC IMPEDANCE (ZO) OF TRANSMISSION LINES	14	7	10	20	2
P 975	P1-23 DO YOU CALCULATE THE CHARACTERISTIC IMPEDANCE (ZO) OF TRANSMISSION LINES	6	7	6	7	0
P 976	P1-24 DO YOU USE OR REFER TO THE TERM CUTOFF FREQUENCY OF TRANSMISSION LINES	13	7	10	18	2
P 977	P1-25 DO YOU USE OR REFER TO THE TERM VELOCITY FACTOR (K) OF TRANSMISSION LINES	6	7	6	6	0
P 978	P1-26 DO YOU COMPUTE THE ELECTRICAL LENGTH OF TRANSMISSION LINES FOR PARTICULAR FREQUENCIES	8	7	8	9	0
P 979	P1-27 DO YOU CONSTRUCT TRANSMISSION LINES OF PARTICULAR ELECTRICAL LENGTH FOR GIVEN FREQUENCIES	6	0	8	6	2
P 980	P1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT AS THE FREQUENCY INCREASES AND THE PHYSICAL LENGTH OF	7	7	6	9	2

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 009	SPC 005	
P 981	P1-29 DO YOU WORK WITH NONRESONANT (FLAT) TRANSMISSION LINES	12	0	10	18	2	
P 982	P1-30 DO YOU WORK WITH RESONANT TRANSMISSION LINES	11	0	10	14	2	
P 983	P1-31 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING STUB MATCHING	13	7	10	18	2	
P 984	P2-01 DO YOU WORK WITH WAVEGUIDES OR CAVITY RESONATORS IN YOUR PRESENT JOB	34	0	32	40	25	
P 985	P2-02 DO YOU INSPECT WAVEGUIDES OR CAVITY RESONATORS	35	0	32	41	26	
P 986	P2-03 DO YOU CLEAN WAVEGUIDES OR CAVITY RESONATORS	28	0	27	32	12	
P 987	P2-04 DO YOU BEND WAVEGUIDES OR CAVITY RESONATORS	9	0	9	9	5	WAVEGUIDES AND CAVITY RESONATORS
P 988	P2-05 DO YOU TWIST WAVEGUIDES OR CAVITY RESONATORS	8	0	9	9	4	
P 989	P2-06 DO YOU PRESSURIZE WAVEGUIDES OR CAVITY RESONATORS	4	0	5	3	2	
P 990	P2-07 DO YOU PURGE WAVEGUIDES OR CAVITY RESONATORS	6	0	7	5	4	
P 991	P2-08 DO YOU TROUBLESHOOT WAVEGUIDES OR CAVITY RESONATORS	24	0	22	30	16	
P 992	P2-09 DO YOU REMOVE OR INSTALL COMPLETE WAVEGUIDES	29	0	26	32	19	
P 993	P2-10 DO YOU REMOVE OR INSTALL WAVEGUIDE SECTIONS	31	0	29	37	21	
P 994	P2-11 DO YOU REMOVE OR INSTALL DUMMY LOADS	31	0	30	36	26	
P 995	P2-12 DO YOU REMOVE OR INSTALL E BENDS	18	0	15	23	18	
P 996	P2-13 DO YOU REMOVE OR INSTALL H BENDS	19	0	16	23	19	
P 997	P2-14 DO YOU REMOVE OR INSTALL OTHER BENDS	20	0	18	24	16	
P 998	P2-15 DO YOU REMOVE OR INSTALL CHOKE JOINTS	11	0	11	12	5	
P 999	P2-16 DO YOU REMOVE OR INSTALL ROTATING JOINTS	8	0	10	8	4	
P1000	P2-17 DO YOU REMOVE OR INSTALL DIRECTIONAL COUPLERS	32	0	29	38	25	
P1001	P2-18 DO YOU REMOVE OR INSTALL BIDIRECTIONAL COUPLERS	27	0	25	31	23	
P1002	P2-19 DO YOU USE OR REFER TO "A" WALL OF WAVEGUIDES	10	0	9	12	14	
P1003	P2-20 DO YOU USE OR REFER TO "B" WALL OF WAVEGUIDES	11	0	9	12	14	
P1004	P2-21 DO YOU USE OR REFER TO CUTOFF FREQUENCY OF WAVEGUIDES	28	0	23	37	25	
P1005	P2-22 DO YOU USE OR REFER TO FREQUENCY-DETERMINING WALL OF WAVEGUIDES	12	0	13	12	11	
P1006	P2-23 DO YOU USE OR REFER TO POWER-DETERMINING WALL OF WAVEGUIDES	10	0	9	11	9	
P1007	P2-24 DO YOU USE OR REFER TO ELECTRIC FIELD BOUNDARY CONDITIONS	7	0	7	7	5	
P1008	P2-25 DO YOU USE OR REFER TO MAGNETIC FIELD BOUNDARY CONDITIONS	6	0	6	7	5	
P1009	P2-26 DO YOU USE OR REFER TO DUPLEXER FIELD BOUNDARY CONDITIONS	4	0	4	4	5	
P1010	P2-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST WAVEGUIDES ARE MADE WITH A "B" WALL SIZE OF .7 WAVELENGTHS	7	0	6	8	5	
P1011	P2-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST "A" WALLS RANGE FROM .2 TO .5 WAVELENGTHS IN SIZE, WITH .35	6	0	6	8	4	
P1012	P2-29 ARE YOU CONCERNED WITH THE MATERIAL (SUCH AS BRASS) WHICH WAVEGUIDES ARE MADE OF	6	0	6	5	4	
P1013	P2-30 DO YOU COMPUTE THE LENGTH OF A WAVEGUIDE FOR SPECIFIC INSTALLATION	5	0	6	5	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	
P1014	P2-31 DO YOU USE THE RIGHT HAND RULE TO DETERMINE THE DIRECTION OF PROPAGATION, DIRECTION OF "E" FIELD, OR	5	0	6	5	4	
P1015	P2-32 DO YOU USE OR REFER TO THE TIME PHASE OF PEAK "E" OR "H" LINES IN WAVEGUIDES	6	0	5	6	9	
P1016	P2-33 DO YOU MEASURE THE TIME PHASE OF "E" OR "H" LINES IN WAVEGUIDES	5	0	4	6	5	
P1017	P2-34 DO YOU USE OR REFER TO THE SPACE QUADRATURE OF "E" OR "H" LINES IN WAVEGUIDES	4	0	4	4	5	
P1018	P2-35 ARE HIGH POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	12	0	12	12	12	
P1019	P2-36 ARE LOW POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	23	0	17	32	23	
P1020	P2-37 ARE LOOPS USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	24	0	19	32	19	
P1021	P2-38 ARE APERTURES (WINDOWS OR IRISES) USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	18	0	12	27	14	
P1022	P2-39 ARE DON'T REMEMBER THE KIND OF ENERGY COUPLING USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	8	0	9	8	0	
P1023	P2-40 DO YOU DETERMINE WHERE PROBES SHOULD BE MOUNTED IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO	6	0	5	8	2	
P1024	P2-41 DO YOU DETERMINE THE POSITIONING OF LOOPS IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO	6	0	5	8	2	
P1025	P2-42 DO YOU DETERMINE THE POSITIONING OR SIZE OF APERTURES IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO	3	0	4	3	0	
P1026	P2-43 ARE CHOKE JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	9	0	8	11	11	
P1027	P2-44 ARE ROTATING JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	5	0	5	6	4	
P1028	P2-45 ARE DON'T REMEMBER THE KIND OF JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	13	0	12	17	4	
P1029	P2-46 DO YOU TUNE CAVITY RESONATORS USING CAPACITIVE TUNING	18	0	16	21	18	
P1030	P2-47 DO YOU TUNE CAVITY RESONATORS USING INDUCTIVE TUNING	14	0	15	18	14	
P1031	P2-48 DO YOU TUNE CAVITY RESONATORS USING VOLUME TUNING	15	0	12	22	7	
P1032	P2-49 DO YOU TUNE CAVITY RESONATORS USING DON'T REMEMBER THE METHOD OF TUNING	8	0	8	11	0	
P1033	P2-50 DO YOU MEASURE THE FREQUENCY OF SIGNALS IN CAVITY RESONATORS	28	0	24	34	25	
P1034	P3-01 IN YOUR PRESENT JOB DO YOU WORK WITH KLYSTRONS, TRAVELING WAVE TUBES (TWT), PARAMETRIC AMPLIFIERS, OR	34	14	31	41	23	
P1035	P3-02 DO YOU USE OR REFER TO INTERELECTRODE CAPACITANCE	17	0	15	21	11	MICROWAVE AMPLIFIERS AND OSCILLATORS
P1036	P3-03 DO YOU USE OR REFER TO ELECTRON TRANSIT TIME	13	0	12	15	5	
P1037	P3-04 DO YOU USE OR REFER TO LEAD INDUCTANCE	14	0	14	15	9	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005
P1038	P3-05 DO YOU USE OR REFER TO RF LOSSES IN EXTERNAL CIRCUITRY	22	7	22	25	11
P1039	P3-06 DO YOU USE OR REFER TO PRINCIPLE OF ELECTRON VELOCITY MODULATION	18	7	17	24	5
P1040	P3-07 DO YOU USE OR REFER TO ELECTRON BUNCHING	20	7	17	26	5
P1041	P3-08 DO YOU WORK WITH TWO-CAVITY KLYSTRONS	14	0	16	14	2
P1042	P3-09 DO YOU WORK WITH THREE-CAVITY KLYSTRONS	8	0	10	7	4
P1043	P3-10 DO YOU WORK WITH REFLEX KLYSTRONS	32	14	28	40	18
P1044	P3-11 DO YOU WORK WITH TRAVELING-WAVE TUBES (TWT)	24	7	20	32	16
P1045	P3-12 DO YOU WORK WITH NONDEGENERATIVE PARAMETRIC AMPLIFIERS	5	0	4	6	2
P1046	P3-13 DO YOU WORK WITH UP-CONVERTER PARAMETRIC AMPLIFIERS	4	0	3	6	0
P1047	P3-14 DO YOU WORK WITH MAGNETRONS	11	7	10	13	7
P1048	P3-15 DO YOU INSPECT KLYSTRONS OR TWT	30	7	27	35	19
P1049	P3-16 DO YOU CLEAN KLYSTRONS OR TWT	20	7	20	23	5
P1050	P3-17 DO YOU TUNE KLYSTRONS OR TWT ELECTRICALLY	31	14	26	40	19
P1051	P3-18 DO YOU TUNE KLYSTRONS OR TWT MECHANICALLY	29	14	25	38	16
P1052	P3-19 DO YOU PERFORM OPERATIONAL CHECKS OF KLYSTRONS OR TWT	32	14	28	39	21
P1053	P3-20 DO YOU TROUBLESHOOT KLYSTRONS OR TWT	28	14	26	34	16
P1054	P3-21 DO YOU REMOVE OR REPLACE COMPLETE KLYSTRON OR TWT	30	14	28	36	16
P1055	P3-22 DO YOU REMOVE OR REPLACE KLYSTRON OR TWT COMPONENTS	16	14	17	17	9
P1056	P3-23 DO YOU INSPECT PARAMETRIC AMPLIFIERS	6	0	6	7	7
P1057	P3-24 DO YOU CLEAN PARAMETRIC AMPLIFIERS	5	0	5	5	2
P1058	P3-25 DO YOU ADJUST PARAMETRIC AMPLIFIERS	6	0	6	7	4
P1059	P3-26 DO YOU TUNE PARAMETRIC AMPLIFIERS	6	0	6	7	4
P1060	P3-27 DO YOU PERFORM OPERATIONAL CHECKS OF PARAMETRIC AMPLIFIERS	6	0	6	7	5
P1061	P3-29 DO YOU TROUBLESHOOT PARAMETRIC AMPLIFIERS	6	0	5	7	4
P1062	P3-29 DO YOU REMOVE OR REPLACE COMPLETE PARAMETRIC AMPLIFIER	5	0	5	6	4
P1063	P3-30 DO YOU REMOVE OR REPLACE PARAMETRIC AMPLIFIER COMPONENTS	5	0	5	6	4
P1064	P3-31 DO YOU INSPECT MAGNETRONS	8	7	8	9	7
P1065	P3-32 DO YOU CLEAN MAGNETRONS	6	7	6	7	2
P1066	P3-33 DO YOU ADJUST MAGNETRONS	7	7	7	8	4
P1067	P3-34 DO YOU TUNE MAGNETRONS	8	7	8	8	5
P1068	P3-35 DO YOU PERFORM OPERATIONAL CHECKS OF MAGNETRONS	8	7	8	9	7
P1069	P3-36 DO YOU TROUBLESHOOT MAGNETRONS	8	7	7	9	5
P1070	P3-37 DO YOU REMOVE OR REPLACE COMPLETE MAGNETRON	8	7	8	8	5
P1071	P3-38 DO YOU REMOVE OR REPLACE MAGNETRON COMPONENTS	5	7	4	4	7
P1072	P3-39 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS COLLECTOR PLATES	13	7	15	14	5
P1073	P3-40 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER CAVITIES	12	7	13	12	5
P1074	P3-41 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER GRIDS	13	7	14	13	5

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005
P1075	PJ-42 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS FEEDBACK LOOPS	14	7	17	13	6
P1076	PJ-43 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS DRIFT SPACES	9	7	10	10	2
P1077	PJ-44 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER GRIDS	12	7	12	14	5
P1078	PJ-45 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER CAVITIES	12	7	12	14	5
P1079	PJ-46 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CONTROL GRIDS	14	7	15	15	7
P1080	PJ-47 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATHODES	14	7	16	15	7
P1081	PJ-48 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON REPELLER (REFLECTOR) PLATES	29	7	25	37	19
P1082	PJ-49 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRIDS	28	7	24	36	16
P1083	PJ-50 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRID CAVITY GAPS	21	0	20	24	11
P1084	PJ-51 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON RESONANT CAVITIES	28	7	24	36	18
P1085	PJ-52 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON MAGNETIC COUPLING LOOPS	19	0	16	25	12
P1086	PJ-53 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON FILAMENTS	27	7	23	35	14
P1087	PJ-54 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON CATHODES	27	7	23	34	18
P1088	PJ-55 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON OUTPUT LEADS	27	7	24	34	14
P1089	PJ-56 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES FILAMENTS	21	7	17	27	12
P1090	PJ-57 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES CATHODES	21	7	17	27	16
P1091	PJ-58 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MODULATOR GRIDS	19	0	16	25	12
P1092	PJ-59 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ANODES	22	7	18	28	18
P1093	PJ-60 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES HELIXES	21	7	17	27	16
P1094	PJ-61 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES COLLECTORS	20	7	16	27	12
P1095	PJ-62 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MAGNETS	16	0	13	22	9
P1096	PJ-63 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ATTENUATORS	19	0	17	23	19
P1097	PJ-64 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE CIRCULATORS	4	0	3	5	2
P1098	PJ-65 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER SIGNAL CAVITIES	5	0	4	6	5

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	
P1099	P3-66 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER IDLER CAVITIES	4	0	3	5	2	
P1100	P3-67 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER VARACTOR DIODES	6	0	6	6	5	
P1101	P3-68 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE ISOLATORS	6	0	4	7	9	
P1102	P3-69 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER REVERSE-BIAS BATTERIES	4	0	4	5	0	
P1103	P3-70 DO YOU PERFORM TASKS ON ANODES	5	0	5	5	2	
P1104	P3-71 DO YOU PERFORM TASKS ON ANODE COOLING PINS	4	0	4	4	0	
P1105	P3-72 DO YOU PERFORM TASKS ON COUPLING LOOPS	5	0	6	5	0	
P1106	P3-73 DO YOU PERFORM TASKS ON HEATER LEADS	5	0	6	5	2	
P1107	P3-74 DO YOU PERFORM TASKS ON RESONANT CAVITIES	5	0	6	5	2	
P1108	P3-75 DO YOU PERFORM TASKS ON CATHODES	5	0	6	5	0	
P1109	P3-76 DO YOU PERFORM TASKS ON MAGNETS	4	0	5	5	0	
Q1110	Q1-01 DO YOU USE OR REFER TO STORAGE REGISTERS	20	7	17	23	25	
Q1111	Q1-02 DO YOU USE OR REFER TO SHIFT REGISTERS	19	0	17	22	21	
Q1112	Q1-03 DO YOU USE OR REFER TO LOGIC SYMBOLS OF SHIFT REGISTERS	18	0	15	21	21	
Q1113	Q1-04 DO YOU USE OR REFER TO LOGIC SYMBOLS OF STORAGE REGISTERS	18	0	15	21	25	REGISTERS
Q1114	Q1-05 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	17	0	16	20	12	
Q1115	Q1-06 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF REGISTERS	17	0	15	21	16	
Q1116	Q1-07 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES	14	0	15	16	7	
Q1117	Q2-01 DO YOU WORK WITH DIGITAL COUNTERS, REGISTERS, OR STORAGE DEVICES IN YOUR PRESENT JOB	33	29	34	34	19	
Q1118	Q2-02 DO YOU USE OR REFER TO DELAY LINES	28	21	28	30	14	
Q1119	Q2-03 DO YOU USE OR REFER TO MAGNETIC CORES	9	7	10	10	4	
Q1120	Q2-04 DO YOU USE OR REFER TO MAGNETIC DRUMS	4	0	4	5	2	STORAGE DEVICES
Q1121	Q2-05 DO YOU USE OR REFER TO MAGNETIC TAPES	6	0	5	6	7	
Q1122	Q2-06 DO YOU USE OR REFER TO ACCESS TIME OR SPEED OR MEMORY SYSTEMS	8	0	9	8	4	
Q1123	Q2-07 DO YOU USE OR REFER TO WORD CAPACITY OF MEMORY SYSTEMS	7	0	7	8	5	
Q1124	Q2-08 DO YOU USE OR REFER TO VOLATILITY OF MEMORY SYSTEMS	5	0	5	5	5	
Q1125	Q2-09 DO YOU USE OR REFER TO LOGIC SYMBOL OF DELAY LINES	14	0	12	17	9	
Q1126	Q3-01 IN YOUR PRESENT JOB, DO YOU WORK WITH DIGITAL-TO-ANALOG (D/A) CONVERTERS, ANALOG-TO-DIGITAL (A/D)	26	14	24	31	18	
Q1127	Q3-02 DO YOU COMPUTE OUTPUT VOLTAGES FOR ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT	9	0	10	9	4	
Q1128	Q3-03 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE COUNT IN ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A)	7	0	8	6	4	DIGITAL TO ANALOG CONVERTERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	
Q1129	Q3-04 DO YOU COMPUTE ANALOG VOLTAGES FOR GIVEN BINARY COUNTS IN ELECTRONIC DIGITAL-TO-ANALOG (D/A) CONVERTERS	11	0	12	12	5	
Q1130	Q3-05 DO YOU PERFORM SAMPLE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	16	0	15	19	11	
Q1131	Q3-06 DO YOU PERFORM HOLD FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	16	0	15	19	12	
Q1132	Q3-07 DO YOU PERFORM COMPARE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	14	0	14	17	7	
Q1131	Q3-08 DO YOU PERFORM DIGITIZE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	15	0	14	17	7	
Q1134	Q3-09 DO YOU PERFORM DON'T REMEMBER WHICH FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER	5	0	6	6	2	
Q1135	Q3-10 DO YOU USE OR REFER TO SAMPLE FUNCTION OF A/D CONVERTERS	16	7	16	19	7	
Q1136	Q3-11 DO YOU USE OR REFER TO HOLD FUNCTION OF A/D CONVERTERS	14	7	15	18	9	
Q1137	Q3-12 DO YOU USE OR REFER TO COMPARE FUNCTION OF A/D CONVERTERS	16	7	15	18	9	
Q1138	Q3-13 DO YOU USE OR REFER TO DIGITAL FUNCTION OF A/D CONVERTERS	17	7	16	21	7	
Q1139	Q3-14 DO YOU PERFORM ANY TASKS ON MECHANICAL ANALOG-TO-DIGITAL (A/D) CONVERTERS	9	7	10	9	0	
R1140	R1-01 DO YOU WORK WITH PHANTASTRON CIRCUITRY IN YOUR PRESENT JOB	33	7	30	41	19	PHANTASTRONS
R1141	R2-01 IN YOUR PRESENT JOB DO YOU WORK WITH SCHMITT TRIGGER CIRCUITS	56	43	57	60	33	
R1142	R2-02 DO YOU TRACE DATA FLOW THROUGH SCHMITT TRIGGER SCHEMATIC DIAGRAMS	52	43	51	56	32	SCHMITT TRIGGERS
R1143	R2-03 DO YOU USE OR REFER TO SCHMITT TRIGGER LOGIC SYMBOLS	39	43	40	41	23	
R1144	R3-01 IN YOUR PRESENT JOB DO YOU FABRICATE MULTICONDUCTOR CABLES	39	21	40	44	14	
R1145	R3-02 DO YOU FABRICATE COAXIAL CABLES	50	43	51	56	14	CABLE FABRICATION
S1146	S1-01 IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS ON VISUAL READOUT SYSTEMS	55	57	60	55	25	
S1147	S1-02 DO YOU PERFORM ANY TASKS ON NIXIE LIGHTS OR NIXIE LIGHT DECODER SYSTEMS	54	36	59	54	28	INPUT/OUTPUT DEVICES
S1148	S1-03 DO YOU ANALYZE NIXIE LIGHT DECODER SYSTEMS USING BOOLEAN ALGEBRA	15	21	17	14	4	
S1149	S2-01 DO YOU WORK WITH PHOTO TUBES IN YOUR PRESENT JOB	31	21	29	36	21	PHOTO SENSITIVE DEVICES
S1150	S3-01 IN YOUR PRESENT JOB DO YOU WORK WITH CHOPPER CIRCUITS	40	43	41	42	21	
S1151	S3-02 DO YOU MEASURE EXCITATION FREQUENCIES	23	14	20	27	16	
S1152	S3-03 DO YOU MEASURE VOLTAGE-CURRENT PHASE RELATIONSHIPS	13	7	14	14	7	
S1153	S3-04 DO YOU USE OR REFER TO EXCITATION FREQUENCIES	23	14	19	29	19	SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS)
S1154	S3-05 DO YOU USE OR REFER TO VOLTAGE-CURRENT PHASE RELATIONSHIPS	13	7	14	14	5	
S1155	S3-06 DO YOU USE SERVOS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	19	21	20	19	11	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	
S1156	S3-07 DO YOU USE DETECTORS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	27	21	25	32	16	
S1157	S3-08 DO YOU USE ERROR SIGNAL DEVICES IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	28	21	23	35	18	
S1158	S3-09 DO YOU USE COMPARISON CIRCUITS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	30	29	26	37	18	
T1159	T1-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH INFRARED SYSTEMS	2	0	2	2	2	
T1160	T1-02 DO YOU INSPECT INFRARED SYSTEMS	1	0	1	2	0	
T1161	T1-03 DO YOU CLEAN INFRARED SYSTEMS	1	0	1	1	0	
T1162	T1-04 DO YOU ADJUST OR CALIBRATE INFRARED SYSTEMS	1	0	1	2	0	INFRARED
T1163	T1-05 DO YOU OPERATE INFRARED SYSTEMS	1	0	1	1	0	
T1164	T1-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF INFRARED SYSTEMS	1	0	1	2	0	
T1165	T1-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF INFRARED SYSTEMS	1	0	1	2	0	
T1166	T1-08 DO YOU TROUBLESHOOT DOWN TO INFRARED SYSTEM COMPONENT PARTS	1	0	1	2	0	
T1167	T1-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF INFRARED SYSTEMS	1	0	1	1	0	
T1168	T1-10 DO YOU REMOVE OR REPLACE INFRARED SYSTEM COMPONENT PARTS	1	0	1	2	0	
T1169	T1-11 DO YOU USE OR REFER TO FAR REGION	1	0	1	1	0	
T1170	T1-12 DO YOU USE OR REFER TO INTERMEDIATE REGION	1	0	1	1	0	
T1171	T1-13 DO YOU USE OR REFER TO NEAR REGION	1	0	1	1	0	
T1172	T1-14 DO YOU USE OR REFER TO MICRON	1	0	2	1	0	
T1173	T1-15 DO YOU USE OR REFER TO GRAY BODIES	0	0	0	1	0	
T1174	T1-16 DO YOU USE OR REFER TO BLACK BODIES	1	0	1	2	0	
T1175	T1-17 DO YOU USE OR REFER TO ABSORPTION	1	0	1	1	0	
T1176	T1-18 DO YOU USE OR REFER TO SCATTERING	1	0	0	1	0	
T1177	T1-19 DO YOU USE OR REFER TO ABSOLUTE ZERO	1	0	1	2	0	
T1178	T1-20 DO YOU PERFORM TASKS ON BLITZ	0	0	0	0	0	
T1179	T1-21 DO YOU PERFORM TASKS ON TARGET BUTTONS	0	0	0	1	0	
T1180	T1-22 DO YOU PERFORM TASKS ON ERECTOR LENSES	0	0	0	1	0	
T1181	T1-23 DO YOU PERFORM TASKS ON OCULAR LENSES	1	0	1	1	0	
T1182	T1-24 DO YOU PERFORM TASKS ON CORRECTION LENSES	0	0	0	1	0	
T1183	T1-25 DO YOU PERFORM TASKS ON FILTERS	1	0	1	1	0	
T1184	T1-26 DO YOU PERFORM TASKS ON SPHERICAL MIRRORS	1	0	0	1	0	
T1185	T1-27 DO YOU PERFORM TASKS ON PLANE MIRRORS	1	0	0	1	0	
T1186	T2-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH LASERS	1	0	1	1	0	
T1187	T2-02 DO YOU INSPECT LASER SYSTEMS	0	0	0	0	0	
T1188	T2-03 DO YOU CLEAN LASER SYSTEMS	0	0	0	0	0	
T1189	T2-04 DO YOU OPERATE LASER SYSTEMS	0	0	1	0	0	LASERS
T1190	T2-05 DO YOU OPERATE LASER SYSTEMS	0	0	1	0	0	
T1191	T2-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF LASER SYSTEMS	0	0	0	0	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	
T1192	T2-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF LASER SYSTEMS	0	0	0	0	0	
T1193	T2-08 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF LASER SYSTEMS	0	0	0	0	0	
T1194	T2-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF LASER SYSTEMS	0	0	0	0	0	
T1195	T2-10 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF LASER SYSTEMS	0	0	0	0	0	
T1196	T2-11 DO YOU USE OR REFER TO ANGSTROMS (A)	0	0	1	0	0	
T1197	T2-12 DO YOU USE OR REFER TO ELECTRON ENERGY LEVELS	0	0	0	0	0	
T1198	T2-13 DO YOU USE OR REFER TO GROUND STATE	0	0	1	0	0	
T1199	T2-14 DO YOU USE OR REFER TO EXCITED STATE	0	0	1	0	0	
T1200	T2-15 DO YOU USE OR REFER TO PACKET OF RADIATION	0	0	0	0	0	
T1201	T2-16 DO YOU USE OR REFER TO PHOTONS	0	0	1	0	0	
T1202	T2-17 DO YOU USE OR REFER TO SPONTANEOUS EMISSION	0	0	0	0	0	
T1203	T2-18 DO YOU USE OR REFER TO STIMULATED EMISSION	0	0	1	0	0	
T1204	T2-19 DO YOU USE OR REFER TO COHERENCE OR INCOHERENCE	0	0	0	0	0	
T1205	T2-20 DO YOU USE OR REFER TO INVERSION LEVEL	0	0	0	0	0	
T1206	T2-21 DO YOU USE OR REFER TO MONOCHROMATIC	1	0	1	1	0	
T1207	T2-22 DO YOU WORK WITH ACTIVE MATERIALS	0	0	0	0	0	
T1208	T2-23 DO YOU WORK WITH PUMPING SOURCES	0	0	0	0	0	
T1209	T2-24 DO YOU WORK WITH FULL SILVERED (100% REFLECTIVE) MIRRORS	0	0	0	0	0	
T1210	T2-25 DO YOU WORK WITH HALF SILVERED (92% REFLECTIVE) MIRRORS	0	0	0	0	0	
T1211	T2-26 DO YOU WORK WITH HELICAL FLASHTUBES	0	0	0	0	0	
T1212	T2-27 DO YOU WORK WITH RUBY	0	0	0	0	0	
T1213	T2-28 DO YOU WORK WITH HELIUM-NEON	0	0	0	0	0	
T1214	T2-29 DO YOU WORK WITH HELIUM-XENON	0	0	0	0	0	
T1215	T2-30 DO YOU WORK WITH XENON	0	0	0	0	0	
T1216	T2-31 DO YOU WORK WITH CESIUM-HELIUM	0	0	0	0	0	
T1217	T2-32 DO YOU WORK WITH ARGON	0	0	0	0	0	
T1218	T2-33 DO YOU WORK WITH NEODYMIUM IN GLASS	0	0	0	0	0	
T1219	T2-34 DO YOU WORK WITH GALLIUM ARSENIDE	0	0	0	0	0	
T1220	T3-01 IN YOUR PRESENT JOB DO YOU WORK WITH DISPLAY TUBES, SUCH AS DIRECT VIEW STORAGE (DVST) OR MULTIPLE MODE	12	0	13	11	4	
T1221	T3-02 DO YOU INSPECT DVST OR MMST	9	0	10	8	2	
T1222	T3-03 DO YOU CLEAN DVST OR MMST	7	0	8	6	2	
T1223	T3-04 DO YOU ADJUST OR CALIBRATE DVST OR MMST	8	0	8	8	4	
T1224	T3-05 DO YOU OPERATE SYSTEMS THAT CONTAIN DVST OR MMST	10	0	11	10	5	DISPLAY TUBES
T1225	T3-06 DO YOU TROUBLESHOOT DVST OR MMST CIRCUITS	9	0	10	9	4	
T1226	T3-07 DO YOU REMOVE OR REPLACE DVST OR MMST TUBES FROM MAJOR ASSEMBLIES OR UNITS	9	0	10	8	4	
T1227	T3-08 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF DVST	4	0	5	5	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		BY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	
T1228	T3-09	DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF MMST	3	0	4	4	0	
T1229	T3-10	DO YOU PERFORM TASKS ON FLOOD GUNS	6	0	7	5	4	
T1230	T3-11	DO YOU PERFORM TASKS ON WRITE GUNS	6	0	7	5	4	
T1231	T3-12	DO YOU PERFORM TASKS ON ATTACK GUNS	3	0	4	3	0	
T1232	T3-13	DO YOU PERFORM TASKS ON ERASE GUNS	6	0	7	5	4	
T1233	T3-14	DO YOU PERFORM TASKS ON STORAGE GRIDS	7	0	8	6	4	
U1234	U1-01	IN YOUR PRESENT JOB, DO YOU PERFORM ANY PROGRAMMING TASKS	3	0	4	3	4	
U1235	U1-02	DO YOU USE OR REFER TO DECIMAL SYSTEMS	4	0	4	4	4	
U1236	U1-03	DO YOU USE OR REFER TO PROGRAMS	3	0	3	2	4	PROGRAMMING
U1237	U1-04	DO YOU USE OR REFER TO HEXIDECIMAL SYSTEMS	1	0	1	1	0	
U1238	U1-05	DO YOU USE OR REFER TO 8-4-2-1 SYSTEMS	2	0	3	2	0	
U1239	U1-06	DO YOU USE OR REFER TO FOUR SYSTEMS	1	0	1	1	0	
U1240	U1-07	DO YOU USE OR REFER TO BINARY SYSTEMS	4	0	4	4	4	
U1241	U1-08	DO YOU USE OR REFER TO TIME-SHARING	2	0	2	2	2	
U1242	U1-09	DO YOU USE OR REFER TO DATA WORDS	2	0	2	2	4	
U1243	U1-10	DO YOU USE OR REFER TO ADDRESS WORDS	2	0	3	2	4	
U1244	U1-11	DO YOU USE OR REFER TO ADDRESS/SUBADDRESS	2	0	2	2	4	
U1245	U1-12	DO YOU USE OR REFER TO STEERING/INFORMATION	2	0	2	2	4	
U1246	U1-13	DO YOU USE OR REFER TO INFORMATION WORDS	2	0	2	2	4	
U1247	U1-14	DO YOU PERFORM TASKS ON SINGLE LEVEL PROGRAMMING	2	0	3	1	2	
U1248	U1-15	DO YOU PERFORM TASKS ON MULTI-LEVEL PROGRAMMING	1	0	2	1	0	
U1249	U1-16	DO YOU PERFORM TASKS ON INPUT DEVICES	2	0	3	0	2	
U1250	U1-17	DO YOU PERFORM TASKS ON STORAGE DEVICES	2	0	3	0	2	
U1251	U1-18	DO YOU PERFORM TASKS ON ARITHMETIC SECTIONS	2	0	3	0	2	
U1252	U1-19	DO YOU PERFORM TASKS ON CONTROL SECTIONS	2	0	3	1	0	
U1253	U1-20	DO YOU PERFORM TASKS ON OUTPUT DEVICES	1	0	2	1	2	
U1254	U1-21	DO YOU PERFORM TASKS ON POWER SUPPLIES	2	0	2	1	0	
U1255	U2-01	DO YOU USE DECIBELS TO EXPRESS AMPLIFICATION AND ATTENUATION	77	64	78	80	60	
U1256	U2-02	DO YOU USE LOGARITHMS TO COMPUTE OUTPUT POWER IN DECIBELS	46	21	42	54	30	DB AND POWER RATIOS
U1257	U2-03	DO YOU USE LOGARITHMS TO COMPUTE ATTENUATION IN DECIBELS	45	21	41	53	28	

AF HUMAN RESOURCES LABORATORY
AIR FORCE SYSTEMS COMMAND

TABULATION OF PERCENT MEMBERS PERFORMING DUTIES AND TASKS BY
AFMS GROUPS IN THE 324X0 CAREER FIELD.

REPORTS ON THE FOLLOWING GROUPS WERE REQUESTED

GROUP IDENTITY =	SPC006	ALL AIRMEN 6-24 MOS IN CAREER FLD	CONTAINING	92 MEMBERS.
GROUP IDENTITY =	SPC007	ALL AIRMEN 25-48 MOS IN CAREER FLD	CONTAINING	278 MEMBERS.
GROUP IDENTITY =	SPC008	ALL AIRMEN 1-48 MOS IN CAREER FLD	CONTAINING	379 MEMBERS.
GROUP IDENTITY =	SPC009	ALL AIRMEN 49-96 MOS IN CAREER FLD	CONTAINING	153 MEMBERS.
GROUP IDENTITY =	SPC010	ALL AIRMEN 97-144 MOS IN CAREER FLD	CONTAINING	148 MEMBERS.
GROUP IDENTITY =	SPC011	ALL AIRMEN 145-192 MOS IN CAREER FLD	CONTAINING	61 MEMBERS.
GROUP IDENTITY =	SPC012	ALL AIRMEN 193+ MOS IN CAREER FLD	CONTAINING	33 MEMBERS.

DUTY GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DUTY	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
A	MATHEMATICS, DIRECT CURRENT, VOLTAGE, AND RESISTANCE	100	100	100	99	99	95	97
B	MULTIMETER USES, ALTERNATING CURRENT, INDUCTORS, AND INDUCTIVE	99	99	99	99	98	100	97
C	CAPACITORS, CAPACITIVE REACTANCE, TRANSFORMERS, AND MAGNETISM	93	97	97	96	89	84	76
D	RCL CIRCUITS, SERIES AND PARALLEL RESONANCE (TIME CONSTANTS), AND FILTERS	78	82	81	86	76	67	52
E	COUPLING, SOLDERING, AND RELAYS	92	94	94	99	82	67	61
F	MICROPHONES, SPEAKERS, AND OSCILLOSCOPES	92	93	93	92	82	66	67
G	SEMICONDUCTOR DIODES, TRANSISTORS, AND TRANSISTOR AMPLIFIERS	91	94	93	93	79	62	58
H	SOLID STATE SPECIAL PURPOSE DEVICES, POWER SUPPLIES, AND OSCILLATORS	96	96	96	96	92	84	88
I	MULTIVIBRATORS, LIMITERS, CLAMPERS, AND ELECTRON TUBES	92	91	91	91	79	59	58
J	ELECTRON TUBE AMPLIFIERS AND CIRCUITS, SPECIAL PURPOSE ELECTRON TUBES, HETERODYNING, MODULATION,	87	87	87	87	78	64	58
K	AM SYSTEMS, FM SYSTEMS, AND NUMBERING SYSTEMS	49	51	51	61	58	46	30
L	LOGIC FUNCTIONS, BOOLEAN EQUATIONS, AND COUNTERS	62	65	65	71	66	56	48
M	TIMING CIRCUITS, USE OF SIGNAL GENERATORS, MOTORS, AND GENERATORS	90	90	90	91	90	84	91
N	METER MOVEMENTS, SATURABLE REACTORS, MAGNETIC AMPLIFIERS, AND WAVESHAPING CIRCUITS	89	91	90	88	78	61	64
O	SINGLE SIDEBAND SYSTEMS, PULSE MODULATION SYSTEMS, AND ANTENNAS	29	35	33	48	41	30	27
P	TRANSMISSION LINES, WAVEGUIDES AND CAVITY RESONATORS, AND MICROWAVE AMPLIFIERS AND OSCILLATORS	27	40	37	55	53	43	33
Q	REGISTERS, STORAGE DEVICES, AND DIGITAL TO ANALOG CONVERTERS	45	45	45	50	52	39	39
R	PHANTASTRONS, SCHMITT TRIGGERS, AND CABLE FABRICATION	72	76	75	76	70	57	48
S	INPUT\OUTPUT DEVICES, PHOTO SENSITIVE DEVICES, AND SYNCHRONOUS VIBRATIONS	65	72	70	73	67	52	42
T	INFRARED, LASERS, AND DISPLAY TUBES	11	16	15	16	12	13	9
U	PROGRAMMING, DB AND POWER RATIOS	70	78	76	78	89	77	67

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
A	1	A1-01 DO YOU USE AN INSTRUMENT, SUCH AS METER OR AN OSCILLOSCOPE, IN WHICH IT IS NECESSARY TO AMPLIFY OR	91	88	89	90	77	62	64	
A	2	A1-02 DO YOU USE A PUBLICATION, SUCH AS A TECHNICAL ORDER OR MAINTENANCE MANUAL, IN WHICH IT IS NECESSARY	67	74	72	78	74	66	73	MATHEMATICS
A	3	A1-03 DO YOU REARRANGE AND SOLVE FORMULAS OR EQUATIONS.	78	83	82	92	82	69	76	
A	4	A1-04 DO YOU FIND THE SQUARE ROOT OF A QUANTITY.	50	62	58	65	70	64	55	
A	5	A1-05 DO YOU SOLVE FOR AN UNKNOWN QUANTITY.	68	77	75	75	78	75	67	
A	6	A1-06 DO YOU CONVERT NUMBERS TO LOGARITHMS.	36	39	38	56	53	59	39	
A	7	A1-07 DO YOU USE LOGARITHM TABLES IN ANY TYPE OF CALCULATIONS.	38	44	42	58	56	57	39	
A	8	A1-08 DO YOU SOLVE QUADRATIC EQUATIONS.	21	23	22	31	22	23	9	
A	9	A1-09 DO YOU USE THE NATURAL SYSTEM OF LOGARITHMS (THIS IS THE LOGARITHM SYSTEM WHICH USES THE NUMBER 2.718 AS	17	15	16	24	11	10	6	
A	10	A1-10 DO YOU WORK WITH VECTOR QUANTITIES, SUCH AS ADDING OR SUBTRACTING TWO VECTORS.	27	30	29	28	33	36	18	
A	11	A1-11 DO YOU WORK WITH TRIGONOMETRIC FUNCTIONS SUCH AS SINE, COSINE, OR TANGENT.	50	53	52	62	59	64	39	
A	12	A1-12 DO YOU DETERMINE AREAS OF PLANE FIGURES, SUCH AS AREAS OF CIRCLES OR TRIANGLES.	17	19	18	20	28	23	15	
A	13	A1-13 DO YOU SOLVE OR USE SIMULTANEOUS EQUATIONS.	24	22	22	24	22	15	3	
A	14	A1-14 DO YOU SOLVE OR USE PROPORTIONS.	58	68	64	75	76	61	52	
A	15	A2-01 DO YOU USE THE TERM VOLTAGE OR VOLT.	97	98	98	97	95	92	85	
A	16	A2-02 DO YOU USE THE TERM ELECTROMOTIVE FORCE (EMF).	60	58	59	56	55	64	64	
A	17	A2-03 DO YOU USE THE TERM OHM.	96	98	97	97	95	92	85	
A	18	A2-04 DO YOU USE THE TERM ION.	28	24	25	35	52	54	45	DIRECT CURRENT AND VOLTAGE
A	19	A2-05 DO YOU USE THE TERM DYNE.	18	13	14	24	21	36	21	
A	20	A2-06 DO YOU USE THE TERM AMPERE.	92	94	93	97	94	89	85	
A	21	A2-07 DO YOU USE THE TERM NEUTRON.	26	17	19	29	28	34	24	
A	22	A2-08 DO YOU USE THE TERM COULOMB.	25	19	20	25	23	20	9	
A	23	A2-09 DO YOU USE THE TERM PROTON.	24	18	20	27	30	28	27	
A	24	A3-01 DO YOU WORK WITH RESISTORS IN YOUR PRESENT JOB.	79	86	85	82	67	48	52	
A	25	A3-02 DO YOU INSPECT RESISTORS.	90	90	90	92	79	56	61	
A	26	A3-03 DO YOU CLEAN RESISTORS.	84	77	78	73	51	44	33	
A	27	A3-04 DO YOU ADJUST RESISTORS.	92	91	91	90	79	54	52	
A	28	A3-05 DO YOU CHECK OHMIC VALUE OF RESISTORS.	92	94	94	93	77	57	61	RESISTANCE
A	29	A3-06 DO YOU REMOVE OR REPLACE RESISTORS.	91	91	91	89	67	49	48	
A	30	A3-07 DO YOU USE OR REFER TO TEMPERATURE COEFFICIENTS FOR RESISTORS ON ANY TASKS IN YOUR PRESENT JOB.	96	98	97	98	92	36	21	
A	31	A3-08 DO YOU USE OR REFER TO RESISTOR SYMBOLS, SUCH AS FOR FIXED RESISTORS OR FOR TAPPED RESISTORS.	91	93	93	92	82	62	64	
A	32	A3-09 DO YOU IDENTIFY OR CLASSIFY THE RESISTORS YOU WORK WITH AS CARBON, FIXED WIRE, SLIDE TAP, RHEOSTAT OR	92	91	92	94	80	61	70	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
A	33	A3-10 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE THE OHMIC VALUE OF RESISTANCE.	92	92	92	93	82	61	70	
A	34	A3-11 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE THE TOLERANCE OF RESISTORS.	90	90	90	92	80	59	70	
A	35	A3-12 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE THE FAILURE RATE OF RESISTORS.	22	17	18	17	12	10	3	
A	36	A3-13 DO YOU MAKE DECISIONS IN WHICH YOU MUST DETERMINE HOW TWO OR MORE BATTERIES MUST BE CONNECTED TOGETHER TO	73	65	66	67	64	46	48	
A	37	A3-14 DO YOU USE OR REFER TO THE SCHEMATIC SYMBOLS WHICH REPRESENT ANY OF THE FOLLOWING COMPONENTS: BATTERY,	93	94	94	94	83	61	67	
A	38	A3-15 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES RESISTIVE CIRCUITS.	82	78	79	84	76	54	58	
A	39	A3-16 DO YOU CALCULATE TOTAL CURRENT FOR SERIES RESISTIVE CIRCUITS.	74	70	71	66	68	54	55	
A	40	A3-17 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES RESISTIVE CIRCUITS.	72	72	72	75	75	52	58	
A	41	A3-18 DO YOU CALCULATE POWER DISSIPATION FOR SERIES RESISTIVE CIRCUITS.	61	57	58	56	61	49	45	
A	42	A3-19 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES PARALLEL RESISTIVE CIRCUITS.	77	73	74	75	70	52	58	
A	43	A3-20 DO YOU CALCULATE TOTAL CURRENT FOR SERIES PARALLEL RESISTIVE CIRCUITS.	68	64	64	62	64	49	52	
A	44	A3-21 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES PARALLEL RESISTIVE CIRCUITS.	68	67	67	69	69	51	45	
A	45	A3-22 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR SERIES PARALLEL RESISTIVE CIRCUITS.	66	58	60	57	61	49	45	
A	46	A3-23 DO YOU CALCULATE POWER DISSIPATION FOR SERIES PARALLEL RESISTIVE CIRCUITS.	57	51	52	54	54	48	36	
A	47	A3-24 DO YOU CALCULATE TOTAL RESISTANCE FOR PARALLEL RESISTIVE CIRCUITS.	78	74	75	77	72	52	58	
A	48	A3-25 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RESISTIVE CIRCUITS.	68	64	65	61	63	49	52	
A	49	A3-26 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR PARALLEL RESISTIVE CIRCUITS.	67	66	66	67	64	49	48	
A	50	A3-27 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR PARALLEL RESISTIVE CIRCUITS.	64	60	60	58	59	48	42	
A	51	A3-28 DO YOU CALCULATE POWER DISSIPATION FOR PARALLEL RESISTIVE CIRCUITS.	54	51	51	53	55	48	36	
B	52	B1-01 DO YOU MEASURE RESISTANCE.	92	95	94	95	79	66	67	
B	53	B1-02 DO YOU REPAIR AN OHMMETER.	68	61	62	50	35	30	33	
B	54	B1-03 DO YOU MEASURE VOLTAGE.	92	96	95	97	80	67	67	
B	55	B1-04 DO YOU REPAIR A VOLTMETER.	73	60	63	54	37	28	33	
B	56	B1-05 DO YOU REPAIR AN AMMETER.	65	58	59	47	35	28	36	MULTIMETER USES
B	57	B1-06 DO YOU MEASURE CURRENT.	83	86	85	90	74	59	58	
B	58	B1-07 DO YOU USE A MULTIMETER.	92	95	95	93	82	69	67	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
B	59	81-08 DO YOU DIRECTLY USE A QUANTITY OF CHARGE CALLED A COULOMB.	12	8	9	5	9	0	6	
B	60	81-09 DO YOU READ SCHEMATICS.	93	96	95	97	91	89	82	
B	61	82-01 DO YOU USE OR REFER THE TERM EFFECTIVE VOLTAGE (RMS).	95	95	95	92	92	92	94	
B	62	82-02 DO YOU USE OR REFER THE TERM PEAK TO PEAK VOLTAGE.	95	93	94	94	91	93	94	
B	63	82-03 DO YOU USE OR REFER THE TERM AVERAGE VOLTAGE (DC).	86	87	86	84	84	82	85	
B	64	82-04 DO YOU USE OR REFER THE TERM WAVE LENGTH.	62	65	64	70	62	79	79	ALTERNATING CURRENT
B	65	82-05 DO YOU USE OR REFER THE TERM FREQUENCY.	93	95	94	95	93	93	97	
B	66	82-06 DO YOU USE OR REFER THE TERM INSTANTANEOUS VALUE.	57	51	52	53	53	61	52	
B	67	83-01 DO YOU WORK WITH INDUCTORS OR CIRCUITS CONTAINING INDUCTORS, CHOKES, OR CHOKE COILS IN YOUR PRESENT JOB.	75	78	77	86	68	51	39	
B	68	83-02 DO YOU INSPECT INDUCTORS.	76	79	78	83	67	54	45	
B	69	83-03 DO YOU CLEAN INDUCTORS.	57	58	57	56	30	21	24	
B	70	83-04 DO YOU ADJUST INDUCTORS.	75	79	78	84	59	44	39	INDUCTORS AND INDUCTIVE REACTANCE
B	71	83-05 DO YOU REMOVE OR REPLACE INDUCTORS.	79	80	80	82	57	39	36	
B	72	83-06 DO YOU USE OR REFER TO INDUCTANCE.	74	82	80	83	72	61	45	
B	73	83-07 DO YOU USE OR REFER TO HENRIES.	64	71	70	77	64	54	42	
B	74	83-08 DO YOU USE OR REFER TO INDUCTIVE REACTANCE.	59	58	59	59	59	49	36	
B	75	83-09 DO YOU USE OR REFER TO COPPER LOSS IN INDUCTORS.	12	10	11	10	9	7	6	
B	76	83-10 DO YOU USE OR REFER TO HYSTERESIS LOSS IN INDUCTORS.	17	22	20	20	15	11	6	
B	77	83-11 DO YOU USE OR REFER TO EDDY CURRENT LOSS IN INDUCTORS.	16	19	19	15	14	15	6	
B	78	83-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTANCE IS PROPORTIONAL TO THE SQUARE OF THE	16	18	17	16	7	15	6	
B	79	83-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE	12	14	14	13	5	8	6	
B	80	83-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS INVERSELY PROPORTIONAL TO	14	13	13	14	6	8	3	
B	81	83-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE	14	17	16	15	12	16	9	
B	82	83-16 DO YOU CALCULATE INDUCTANCE FOR A PARTICULAR INDUCTOR USING FORMULAS.	17	20	19	19	12	13	15	
B	83	83-17 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES.	26	28	28	30	24	23	18	
B	84	83-18 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN PARALLEL.	26	29	28	30	24	25	18	
B	85	83-19 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES-PARALLEL CIRCUITS.	21	26	24	25	22	23	9	
B	86	83-20 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LAGS VOLTAGE IN AC INDUCTOR CIRCUITS.	39	32	33	37	38	36	24	
B	87	83-21 DO YOU CALCULATE INDUCTIVE REACTANCE.	33	31	31	27	34	31	21	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

			Dy-TSk	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
B	88	B3-22	DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTIVE REACTANCE IS DIRECTLY PROPORTIONAL TO	51	42	45	46	57	44	36	
B	89	B3-23	DO YOU WORK WITH POWER INDUCTORS.	32	36	34	42	41	31	27	
B	90	B3-24	DO YOU WORK WITH AUDIO FREQUENCY INDUCTORS.	59	66	65	71	65	51	48	
B	91	B3-25	DO YOU WORK WITH RADIO FREQUENCY INDUCTORS.	60	68	66	73	61	54	48	
C	92	C1-01	DO YOU WORK WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS ON YOUR PRESENT JOB.	84	90	88	89	71	56	42	
C	93	C1-02	DO YOU INSPECT CAPACITORS.	86	90	89	88	73	54	55	
C	94	C1-03	DO YOU CLEAN CAPACITORS.	71	72	72	65	43	33	36	
C	95	C1-04	DO YOU ADJUST CAPACITORS.	91	91	91	87	68	56	48	CAPACITORS AND CAPACITIVE REACTANCE
C	96	C1-05	DO YOU TEST CAPACITORS.	87	90	89	88	71	57	55	
C	97	C1-06	DO YOU DISCHARGE CAPACITORS.	79	85	83	85	69	52	45	
C	98	C1-07	DO YOU REMOVE OR REPLACE CAPACITORS.	89	91	91	86	61	48	42	
C	99	C1-08	DO YOU USE OR REFER TO DISTRIBUTED CAPACITANCE.	33	32	32	39	47	39	30	
C	100	C1-09	DO YOU USE OR REFER TO ORBITAL STRESS OF ELECTRONS IN A DIELECTRIC.	3	6	5	5	4	3	3	
C	101	C1-10	DO YOU USE OR REFER TO FARADS, MICROFARADS, OR PICOFARADS.	86	91	90	90	79	67	58	
C	102	C1-11	DO YOU USE OR REFER TO CAPACITANCE.	86	92	91	89	78	67	58	
C	103	C1-12	DO YOU USE OR REFER TO DIELECTRIC CONSTANT.	20	33	30	28	25	25	12	
C	104	C1-13	DO YOU USE OR REFER TO WORKING VOLTAGE RATING OF CAPACITORS.	82	85	84	85	77	59	55	
C	105	C1-14	DO YOU USE OR REFER TO CAPACITIVE REACTANCE.	51	54	53	52	56	46	33	
C	106	C1-15	DO YOU USE OR REFER TO CAPACITOR COLOR CODES.	57	59	58	62	64	54	42	
C	107	C1-16	THE CAPACITORS YOU WORK WITH IN DC CIRCUITS.	88	89	89	88	73	57	48	
C	108	C1-17	THE CAPACITORS YOU WORK WITH ARE IN AC CIRCUITS.	89	95	93	91	76	61	55	
C	109	C1-18	THE CAPACITORS YOU WORK WITH ARE IN CIRCUITS WITH BOTH DC AND AC.	88	92	91	89	75	62	48	
C	110	C1-19	THE CAPACITORS YOU WORK WITH ARE DON'T REMEMBER WHICH CIRCUITS.	8	9	9	8	6	2	3	
C	111	C1-20	DO YOU CALCULATE CAPACITANCE FOR A PARTICULAR CAPACITOR USING FORMULAS.	22	23	23	27	22	28	18	
C	112	C1-21	DO YOU USE OR REFER TO THE GENERAL RULE THAT THE CAPACITANCE OF A CAPACITOR IS DIRECTLY PROPORTIONAL	14	16	15	17	12	7	6	
C	113	C1-22	DO YOU USE OR REFER TO THE GENERAL RULE THAT THE CAPACITANCE OF A CAPACITOR IS INVERSELY PROPORTIONAL	20	21	21	19	20	10	6	
C	114	C1-23	DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES.	45	52	50	50	56	39	36	
C	115	C1-24	DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN PARALLEL.	48	53	51	50	60	43	39	
C	116	C1-25	DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES-PARALLEL CIRCUITS.	42	44	43	48	43	38	24	
C	117	C1-26	DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT DOES NOT FLOW THROUGH CAPACITORS, IT ONLY	58	49	52	45	47	33	42	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
C 118	C1-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEADS VOLTAGE IN AC CAPACITOR CIRCUITS.	36	34	34	35	43	31	27	
C 119	C1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITIVE REACTANCE IS INVERSELY PROPORTIONAL TO	47	46	47	50	58	46	42	
C 120	C1-29 DO YOU CALCULATE CAPACITIVE REACTANCE.	34	32	32	32	41	31	29	
C 121	C1-30 DO YOU WORK WITH ROTOR-STATOR CAPACITORS (VARIABLE).	83	86	85	84	70	57	52	
C 122	C1-31 DO YOU WORK WITH COMPRESSION (TRIMMER) CAPACITORS.	84	87	86	85	73	57	52	
C 123	C1-32 DO YOU WORK WITH ELECTROLYTIC CAPACITORS (FIXED).	89	91	91	91	72	59	55	
C 124	C1-33 DO YOU WORK WITH PAPER CAPACITORS (FIXED).	85	92	90	91	74	59	52	
C 125	C1-34 DO YOU WORK WITH MICA CAPACITORS (FIXED).	89	90	90	90	75	59	56	
C 126	C1-35 DO YOU WORK WITH CERAMIC CAPACITORS (FIXED).	90	92	91	90	74	59	55	
C 127	C1-36 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF CAPACITORS.	5	8	7	6	5	3	3	
C 128	C2-01 DO YOU WORK WITH TRANSFORMERS ON YOUR PRESENT JOB.	74	83	81	81	68	46	33	
C 129	C2-02 DO YOU INSPECT TRANSFORMERS.	75	83	80	84	71	48	52	
C 130	C2-03 DO YOU CLEAN TRANSFORMERS.	49	55	53	56	32	23	27	
C 131	C2-04 DO YOU ADJUST TRANSFORMERS.	45	49	48	52	47	26	33	TRANSFORMERS
C 132	C2-05 DO YOU TROUBLESHOOT TRANSFORMERS.	73	78	77	81	67	46	48	
C 133	C2-06 DO YOU REMOVE OR REPLACE COMPLETE TRANSFORMERS.	76	83	81	83	59	41	39	
C 134	C2-07 DO YOU REMOVE OR REPLACE TRANSFORMER PARTS, SUCH AS THE PRIMARY WINDING.	7	12	10	12	3	2	3	
C 135	C2-08 DO YOU MAKE A DISTINCTION BETWEEN MUTUAL INDUCTION AND MUTUAL INDUCTANCE (M).	11	9	9	4	11	2	6	
C 136	C2-09 DO YOU USE THE SYMBOL FOR MUTUAL INDUCTANCE, M.	10	9	9	6	7	2	9	
C 137	C2-10 DO YOU REFER TO OR USE THE COEFFICIENT OF COUPLING WHEN WORKING WITH TRANSFORMERS.	16	17	16	17	15	5	6	
C 138	C2-11 DO YOU CALCULATE TURNS RATIOS FOR TRANSFORMERS USING CURRENT OR VOLTAGE RATIOS.	29	27	27	28	26	18	9	
C 139	C2-12 DO YOU REFER TO REFLECTED IMPEDANCE WHEN WORKING WITH TRANSFORMERS.	23	21	21	15	14	16	15	
C 140	C2-13 DO YOU CALCULATE IMPEDANCE INTERACTIONS FOR TRANSFORMERS.	7	10	9	8	9	3	0	
C 141	C2-14 DO YOU WORK WITH AUTOTRANSFORMERS.	73	75	75	80	68	51	52	
C 142	C2-15 DO YOU WORK WITH POWER TRANSFORMERS.	75	81	79	82	70	54	48	
C 143	C2-16 DO YOU WORK WITH AUDIO TRANSFORMERS.	60	65	64	76	69	51	48	
C 144	C2-17 DO YOU WORK WITH RADIO FREQUENCY TRANSFORMERS.	52	63	60	73	65	52	52	
C 145	C2-18 DO YOU WORK WITH DON'T REMEMBER WHAT TYPE OF TRANSFORMER.	2	9	8	8	6	0	3	
C 146	C2-19 DO YOU CHECK TRANSFORMERS FOR OPEN WINDINGS BY MEASURING RESISTANCE.	78	81	80	84	68	51	48	
C 147	C2-20 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING RESISTANCE.	69	75	72	79	65	44	45	
C 148	C2-21 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING OUTPUT VOLTAGES.	73	71	72	75	60	44	45	
C 149	C2-22 DO YOU MEASURE RESISTANCE OF TRANSFORMER WINDINGS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR	38	31	32	29	28	20	29	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
C 150	C2-23 DO YOU MEASURE OUTPUT VOLTAGE OF TRANSFORMERS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-	51	53	53	53	45	33	33	
C 151	C2-24 DO YOU REFER TO THE BASIC TRANSFORMER SCHEMATIC SYMBOLS FOR TRANSFORMERS.	78	84	83	89	72	54	52	
C 152	C2-25 DO YOU REFER TO THE MULTIPLE SECONDARY-WINDINGS SCHEMATIC SYMBOLS FOR TRANSFORMERS.	75	80	78	81	70	54	48	
C 153	C2-26 DO YOU REFER TO THE MULTIPLE TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS.	75	81	79	83	70	54	48	
C 154	C2-27 DO YOU REFER TO THE CENTER TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS.	77	83	82	86	72	54	52	
C 155	C2-28 DO YOU REFER TO THE AIR CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS.	59	54	55	52	53	43	33	
C 156	C2-29 DO YOU REFER TO THE IRON CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS.	65	58	60	55	53	43	36	
C 157	C2-30 DO YOU REFER TO THE COMBINATIONS OF THE ABOVE SCHEMATIC SYMBOLS FOR TRANSFORMERS.	65	71	70	69	61	52	48	
C 158	C2-31 DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING	46	39	40	42	52	43	33	
C 159	C2-32 DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN TRANSFORMERS YOU WORK WITH.	48	35	38	27	32	20	21	
C 160	C2-33 DO YOU REFER TO OR USE THE GENERAL RULE THAT THE TURNS RATIO OF A TRANSFORMER IS EQUAL TO THE VOLTAGE	91	91	91	91	91	30	27	
C 161	C2-34 DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN RATIOS FOR TRANSFORMERS.	53	54	54	57	59	38	39	
C 162	C2-35 DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS USING TURNS RATIOS.	32	31	30	28	28	20	9	
C 163	C2-36 DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS USING TURNS RATIOS.	28	24	25	20	26	16	9	
C 164	C2-37 DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH 3 PHASE TRANSFORMERS.	33	31	31	37	37	36	21	
C 165	C2-38 DO YOU INSPECT 3 PHASE TRANSFORMERS.	23	24	24	28	32	26	12	
C 166	C2-39 DO YOU CLEAN OR LUBRICATE 3 PHASE TRANSFORMERS.	12	15	14	14	9	3	9	
C 167	C2-40 DO YOU ADJUST 3 PHASE TRANSFORMERS.	15	13	13	15	14	3	3	
C 168	C2-41 DO YOU TROUBLESHOOT 3 PHASE TRANSFORMERS.	23	22	22	27	31	21	9	
C 169	C2-42 DO YOU REMOVE OR REPLACE COMPLETE 3 PHASE TRANSFORMER.	23	20	21	27	28	26	12	
C 170	C2-43 DO YOU REMOVE OR REPLACE 3 PHASE TRANSFORMER PARTS, SUCH AS A WINDING.	4	5	5	6	3	2	6	
C 171	C3-01 DO YOU USE OR REFER TO PERMANENT MAGNETS.	57	49	51	43	62	61	55	
C 172	C3-02 DO YOU USE OR REFER TO TEMPORARY MAGNETS.	41	32	34	33	42	30	39	
C 173	C3-03 DO YOU USE OR REFER TO RETENTIVITY OF MAGNETIC MATERIALS.	26	14	17	12	17	15	15	
C 174	C3-04 DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC MATERIALS.	25	12	15	10	13	10	12	MAGNETISM

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
C	175	C3-05 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS.	27	14	17	14	20	16	15	
C	176	C3-06 DO YOU USE OR REFER TO RESIDUAL MAGNETISM.	30	18	21	22	26	25	33	
C	177	C3-07 DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE OR FLUX.	30	25	27	25	38	44	21	
C	178	C3-08 DO YOU USE OR REFER TO WEBER'S THEORY OF MAGNETISM.	9	6	7	5	3	7	3	
C	179	C3-09 DO YOU USE OR REFER TO THE DOMAIN THEORY OF MAGNETISM.	11	8	8	7	3	10	3	
C	180	C3-10 DO YOU USE OR REFER TO MAGNETIC INDUCTION.	34	23	25	20	32	31	18	
C	181	C3-11 DO YOU USE OR REFER TO FLUX DENSITY.	21	18	19	16	28	26	18	
C	182	C3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT FOR MAGNETIC POLES, LIKE POLES REPEL AND UNLIKE POLES	48	52	51	44	51	49	48	
C	183	C3-13 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE DIRECTION OF MAGNETIC FIELDS ABOUT STRAIGHT WIRES.	22	20	20	16	13	18	9	
C	184	C3-14 DO YOU USE THE LEFT THUMB RULE TO FIND THE NORTH POLE OF A CURRENT CARRYING COIL.	23	17	18	12	12	14	9	
D	185	D1-01 DO YOU WORK WITH RC, LR, OR RCL CIRCUITS ON YOUR PRESENT JOB.	59	65	63	69	62	46	42	
D	186	D1-02 DO YOU USE OR REFER TO VECTORS WHEN WORKING WITH RCL CIRCUITS.	20	19	19	18	26	23	24	RCL CIRCUITS
D	187	D1-03 DO YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN WORKING WITH RCL CIRCUITS.	20	13	14	14	18	16	15	
D	188	D1-04 DO YOU USE OR REFER TO SINE WHEN WORKING WITH RCL CIRCUITS.	32	24	26	26	32	31	21	
D	189	D1-05 DO YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL CIRCUITS.	32	23	25	26	30	28	21	
D	190	D1-06 DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL CIRCUITS.	29	22	24	24	28	26	21	
D	191	D1-07 DO YOU USE OR REFER TO WATTS WHEN WORKING WITH RCL CIRCUITS.	90	96	97	92	39	33	30	
D	192	D1-08 DO YOU USE OR REFER TO TRUE POWER (PT) WHEN WORKING WITH RCL CIRCUITS.	36	32	33	30	34	25	27	
D	193	D1-09 DO YOU USE OR REFER TO MAXIMUM POWER (PM) WHEN WORKING WITH RCL CIRCUITS.	34	33	33	36	34	25	21	
D	194	D1-10 DO YOU USE OR REFER TO AVERAGE POWER (PAVE) WHEN WORKING WITH RCL CIRCUITS.	36	37	37	37	39	33	27	
D	195	D1-11 DO YOU USE OR REFER TO APPARENT POWER (PA) WHEN WORKING WITH RCL CIRCUITS.	29	30	29	29	29	18	21	
D	196	D1-12 DO YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING WITH RCL CIRCUITS.	26	30	29	29	34	20	18	
D	197	D1-13 DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN WORKING WITH RCL CIRCUITS.	51	54	53	62	61	46	36	
D	198	D1-14 DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH RCL CIRCUITS.	59	63	61	69	65	54	39	
D	199	D1-15 DO YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH RCL CIRCUITS.	52	54	53	59	59	48	36	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
D 200	D1-16 DO YOU USE OR REFER TO RESONANT FREQUENCY WHEN WORKING WITH RCL CIRCUITS.	55	59	57	69	61	54	33
D 201	D1-17 DO YOU USE OR REFER TO HALF POWER POINTS WHEN WORKING WITH RCL CIRCUITS.	43	42	42	56	60	43	39
D 202	D1-18 DO YOU USE OR REFER TO BRANDPASS REGION WHEN WORKING WITH RCL CIRCUITS.	52	53	53	63	58	44	36
D 203	D1-19 DO YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH RCL CIRCUITS.	33	29	30	32	38	31	21
D 204	D1-20 DO YOU USE OR REFER TO TANK CIRCUITS WHEN WORKING WITH RCL CIRCUITS.	53	54	53	63	59	49	27
D 205	D1-21 DO YOU DETERMINE VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS: SINE OF AN ANGLE = OPPOSITE SIDE	29	24	25	33	32	38	27
D 206	D1-22 DO YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS.	13	12	12	10	16	16	6
D 207	D1-23 DO YOU CALCULATE TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS.	23	20	20	20	22	18	6
D 208	D1-24 DO YOU CALCULATE PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS.	12	13	12	10	16	18	12
D 209	D1-25 DO YOU CALCULATE TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS.	21	18	19	16	19	15	12
D 210	D1-26 DO YOU CALCULATE IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS.	10	10	10	7	16	8	9
D 211	D1-27 DO YOU CALCULATE APPARENT POWER (PA) FOR SERIES RCL CIRCUITS.	20	13	14	13	17	7	9
D 212	D1-28 DO YOU CALCULATE TRUE POWER (PT) FOR SERIES RCL CIRCUITS.	23	15	17	14	21	13	12
D 213	D1-29 DO YOU CALCULATE POWER FACTORS (PF) FOR SERIES RCL CIRCUITS.	18	15	16	15	18	11	12
D 214	D1-30 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RCL CIRCUITS.	21	19	19	16	20	7	9
D 215	D1-31 DO YOU CALCULATE IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS.	10	9	9	8	14	10	9
D 216	D1-32 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING THE ASSUMED VOLTAGE METHOD.	16	10	11	9	14	10	6
D 217	D1-33 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING OHM'S LAW.	23	18	19	19	19	13	9
D 218	D1-34 DO YOU CHECK CAPACITORS USING OHMMETERS.	58	65	63	67	65	93	48
D 219	D1-35 DO YOU CHECK CAPACITORS USING SUBSTITUTION.	57	65	63	67	60	91	48
D 220	D1-36 DO YOU CHECK INDUCTORS USING OHMMETERS.	49	63	59	61	62	93	48
D 221	D1-37 DO YOU CHECK INDUCTORS USING SUBSTITUTION.	51	57	55	63	53	33	48
D 222	D1-38 DO YOU USE OR REFER TO THE GENERAL RULE THAT THETA=0, PF=1, AND PA=PT FOR RESONANT CIRCUITS.	15	7	9	7	9	8	6
D 223	D1-39 DO YOU CALCULATE RESONANT FREQUENCIES FOR RCL CIRCUITS.	20	23	22	24	24	25	18
D 224	D1-40 DO YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE	29	25	26	31	37	34	21

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
D 225	D1-01 DO YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT	25	22	23	27	36	33	24	
D 226	D1-02 DO YOU USE OR REFER TO THE GENERAL RULE THAT HALF POWER POINTS ARE AT 70.7 PERCENT OF THE PEAK	45	44	44	54	55	43	33	
D 227	D1-03 DO YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO Q.	25	24	24	28	32	21	16	
D 228	D1-04 DO YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE, CAPACITANCE, OR INDUCTANCE WILL AFFECT	25	25	25	23	24	26	21	
D 229	D2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH, USE, OR REFER TO SERIES OR PARALLEL RESONANCE CIRCUITS OR	30	38	36	46	49	51	21	
D 230	D2-02 DO YOU WORK WITH, USE, OR REFER TO TIME CONSTANTS.	27	35	33	43	47	51	21	SERIES AND PARALLEL RESONANCE (TIME CONSTANTS)
D 231	D2-03 DO YOU WORK WITH, USE, OR REFER TO AVAILABLE VOLTAGE.	24	19	20	24	21	30	15	
D 232	D2-04 DO YOU WORK WITH, USE, OR REFER TO TRANSIENT INTERVALS.	17	14	15	16	21	25	9	
D 233	D2-05 DO YOU USE OR REFER TO THE GENERAL RULE THAT A CAPACITOR IS FULLY CHARGED (OR DISCHARGED) AFTER FIVE	24	21	21	24	34	28	24	
D 234	D2-06 DO YOU USE OR REFER TO UNIVERSAL TIME-CONSTANT CHARTS.	15	12	12	12	15	13	6	
D 235	D2-07 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CIRCUITS CURRENT OR COMPONENT VOLTAGES AFTER A	14	10	11	10	18	13	9	
D 236	D2-08 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE THE TIME REQUIRED FOR CIRCUIT CURRENT OR COMPONENT	14	15	14	12	19	13	9	
D 237	D2-09 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE COMPONENT VALUES REQUIRED FOR CIRCUIT CURRENT AND	15	12	12	11	20	16	6	
D 238	D2-10 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT IN LR CIRCUITS REACHES ITS MINIMUM VALUE (OR	22	12	14	15	21	21	12	
D 239	D3-01 DO YOU WORK WITH CIRCUITS USED AS FILTERS ON YOUR PRESENT JOB.	62	69	67	73	65	98	39	
D 240	D3-02 DO YOU INSPECT FILTER CIRCUITS.	61	66	65	67	61	93	36	
D 241	D3-03 DO YOU CLEAN FILTER CIRCUITS.	93	95	94	96	30	15	21	FILTERS
D 242	D3-04 DO YOU ALIGN OR ADJUST FILTER CIRCUITS.	51	60	58	61	94	33	30	
D 243	D3-05 DO YOU TROUBLESHOOT TO THE FILTER CIRCUIT.	59	65	64	61	58	39	39	
D 244	D3-06 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF FILTER CIRCUITS.	59	67	65	67	59	91	39	
D 245	D3-07 DO YOU REMOVE OR REPLACE THE COMPLETE FILTER CIRCUIT.	53	62	59	63	51	36	36	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
D	246	DJ-08 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF FILTER CIRCUITS.	59	64	63	63	53	33	36	
D	247	DJ-09 DO YOU WORK ON LOW PASS FILTERS.	60	65	63	73	62	51	39	
D	248	DJ-10 DO YOU WORK ON HIGH PASS FILTERS.	59	63	62	71	59	49	39	
D	249	DJ-11 DO YOU WORK ON BANDPASS FILTERS.	58	64	62	71	60	48	36	
D	251	DJ-13 DO YOU WORK ON DON'T REMEMBER WHICH TYPE OF FILTER	51	54	53	61	51	48	33	
D	250	DJ-12 DO YOU WORK ON BAND-REJECT FILTERS.	9	11	10	10	7	3	3	
D	252	DJ-14 DO YOU WORK WITH L-SECTION FILTER CONFIGURATIONS.	50	51	51	54	52	44	30	
D	253	DJ-15 DO YOU WORK WITH T-SECTION FILTER CONFIGURATIONS.	50	53	52	56	57	48	33	
D	254	DJ-16 DO YOU WORK WITH PI-SECTION FILTER CONFIGURATIONS.	52	53	52	56	59	48	33	
D	255	DJ-17 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF FILTER CONFIGURATIONS.	10	19	17	16	9	7	9	
D	256	DJ-18 ARE PARALLEL RESONANT CIRCUITS USED IN FILTERS YOU WORK WITH.	35	42	40	52	55	41	27	
D	257	DJ-19 ARE SERIES-PARALLEL CIRCUITS USED IN FILTERS YOU WORK WITH.	36	45	42	50	55	41	27	
D	258	DJ-20 ARE SERIES RESONANT CIRCUITS USED IN FILTERS YOU WORK WITH.	35	43	41	51	56	43	30	
D	259	DJ-21 ARE DON'T REMEMBER WHICH TYPE OF BASIC CIRCUIT USED IN FILTERS YOU WORK WITH.	16	28	25	19	11	5	12	
D	260	DJ-22 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CAPACITANCE OR INDUCTANCE VALUES REQUIRED FOR SPECIFIC	13	13	13	20	16	8	9	
E	261	EI-01 DO YOU WORK WITH COUPLING DEVICES ON YOUR PRESENT JOB.	54	64	61	73	69	48	42	
E	262	EI-02 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED	55	62	60	74	70	49	45	
E	263	EI-03 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED	49	56	54	67	62	49	45	COUPLING
E	264	EI-04 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED	55	60	59	71	68	48	45	
E	265	EI-05 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THE RC COUPLING FUNCTIONS.	54	62	60	71	63	43	42	
E	266	EI-06 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THE IMPEDANCE COUPLING FUNCTIONS.	50	53	52	67	59	43	42	
E	267	EI-07 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THE TRANSFORMER COUPLING FUNCTIONS.	52	59	57	71	64	43	42	
E	268	EI-08 DO YOU WORK WITH DIRECTLY COUPLED CIRCUITS.	52	60	58	71	67	46	42	
E	269	EI-09 DO YOU WORK WITH CAPACITIVE-RESISTIVE COUPLED CIRCUITS.	55	60	59	73	68	46	42	
E	270	EI-10 DO YOU WORK WITH CAPACITIVE-INDUCTIVE COUPLED CIRCUITS.	47	55	52	69	61	43	36	
E	271	EI-11 DO YOU WORK WITH TRANSFORMER COUPLED CIRCUITS.	51	58	56	73	66	46	39	
E	272	EI-12 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF COUPLING CIRCUIT.	7	9	8	7	7	2	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
E 273	E2-01 ON YOUR PRESENT JOB DO YOU PERFORM SOLDERING TECHNIQUES OR INSPECT OR EVALUATE SOLDERED CONNECTIONS.	87	88	88	88	72	59	52	
E 274	E2-02 DO YOU SELECT TYPE OF SOLDER TO USE.	80	74	75	76	64	56	45	
E 275	E2-03 DO YOU ADD FLUX TO CONNECTIONS.	79	79	80	77	58	48	30	SOLDERING
E 276	E2-04 DO YOU CLEAN CONNECTIONS USING SOLVENTS.	83	82	83	84	57	48	42	
E 277	E2-05 DO YOU STRIP INSULATION FROM WIRES.	88	90	89	90	66	52	48	
E 278	E2-06 DO YOU CONNECT OR DISCONNECT HEAT SINKS.	85	87	86	88	66	52	45	
E 279	E2-07 DO YOU BEND OR SHAPE WIRES OR LEADS.	89	89	89	90	67	52	48	
E 280	E2-08 DO YOU CUT WIRES.	89	89	89	90	67	52	48	
E 281	E2-09 DO YOU FILE OR SHAPE SOLDERING IRON TIPS.	63	64	63	69	51	43	42	
E 282	E2-10 DO YOU TIN SOLDERING IRON TIPS.	87	87	87	86	68	51	48	
E 283	E2-11 DO YOU CLEAN SOLDERING IRON TIPS.	88	89	89	90	67	52	48	
E 284	E2-12 DO YOU CLEAN ELECTRICAL SURFACES USING ERASERS.	83	83	82	88	66	49	45	
E 285	E2-13 DO YOU TIN OR PRE-TIN CONDUCTORS.	87	87	87	89	68	52	48	
E 286	E2-14 DO YOU INSPECT SOLDERED CONNECTIONS.	87	89	89	90	74	57	55	
E 287	E2-15 DO YOU DESOLDER CONNECTIONS BY WICKING.	67	62	63	61	53	38	39	
E 288	E2-16 DO YOU DESOLDER CONNECTIONS USING VACUUM DESOLDERING TOOLS.	84	85	85	85	62	51	42	
E 289	E2-17 DO YOU CUT COMPONENT LEADS TO REMOVE COMPONENTS.	73	73	73	70	61	44	39	
E 290	E2-18 DO YOU CRUSH COMPONENTS FOR REMOVAL.	24	31	29	34	23	16	15	
E 291	E2-19 DO YOU MAKE HARDWIRE CONNECTIONS.	83	85	84	88	64	51	42	
E 292	E2-20 DO YOU MAKE PRINTED CIRCUIT BOARD CONNECTIONS	89	89	89	90	68	52	45	
E 293	E2-21 DO YOU SOLDER PASSIVE COMPONENTS SUCH AS RESISTORS OR CAPACITORS ON PRINTED CIRCUIT BOARDS	89	90	90	90	68	52	45	
E 294	E2-22 DO YOU SOLDER ACTIVE COMPONENTS SUCH AS SOLID-STATE DIODES OR TRANSISTORS ON PRINTED CIRCUIT BOARDS	90	90	90	89	68	52	45	
E 295	E3-01 DO YOU WORK WITH RELAYS ON YOUR PRESENT JOB	65	71	70	73	66	48	30	
E 296	E3-02 DO YOU ADJUST RELAYS	48	44	45	50	38	31	18	
E 297	E3-03 DO YOU CLEAN RELAYS	61	62	61	65	52	44	33	
E 298	E3-04 DO YOU INSPECT RELAYS	64	71	69	68	64	44	33	
E 299	E3-05 DO YOU REMOVE OR REPLACE COMPLETE RELAYS	66	73	71	69	57	44	33	RELAYS
E 300	E3-06 DO YOU REMOVE OR REPLACE PARTS OR RELAYS	25	28	27	27	18	13	15	
E 301	E3-07 DO YOU TROUBLESHOOT RELAYS	63	69	67	67	63	44	36	
E 302	E3-08 DO YOU STRAIGHTEN RELAY CONTACTS	54	56	55	55	47	30	24	
E 303	E3-09 DO YOU PERFORM TASKS ON RELAY CONTACTS	55	60	59	58	51	43	33	
E 304	E3-10 DO YOU PERFORM TASKS ON RELAY CORES	14	17	16	17	14	8	6	
E 305	E3-11 DO YOU PERFORM TASKS ON RELAY COILS	19	22	20	24	20	15	6	
E 306	E3-12 DO YOU PERFORM TASKS ON RELAY ARMATURES	17	24	23	23	18	16	6	
E 307	E3-13 DO YOU PERFORM TASKS ON RELAY SPRINGS	35	37	36	32	32	26	18	
E 308	E3-14 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY OPER (NO) SCHEMATIC SYMBOLS FOR RELAYS	61	60	61	59	65	46	36	
E 309	E3-15 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY CLOSED (NC) SCHEMATIC SYMBOLS FOR RELAYS	60	61	61	59	64	46	33	
E 310	E3-16 DO YOU USE OR REFER TO SINGLE POLE, DOUBLE THROW (SPDT) SCHEMATIC SYMBOLS FOR RELAYS	60	60	60	61	64	46	36	
E 311	E3-17 DO YOU USE OR REFER TO DOUBLE POLE, DOUBLE THROW (DPDT) SCHEMATIC SYMBOLS FOR RELAYS	58	60	59	61	65	46	36	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		BY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
E	312	E3-18 DO YOU USE OR REFER TO OTHER RELAY SYMBOLS SCHEMATIC SYMBOLS FOR RELAYS	48	55	53	54	58	39	33	
E	313	E3-19 DO YOU CHECK ELECTRICAL CONTINUITY OF COILS BY MEASURING RESISTANCE	59	65	63	67	59	48	36	
F	314	F1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH MICROPHONES	10	9	9	12	11	10	18	
F	315	F1-02 DO YOU INSPECT MICROPHONES	4	8	7	10	7	8	12	
F	316	F1-03 DO YOU CLEAN MICROPHONES	3	5	5	8	7	7	9	
F	317	F1-04 DO YOU OPERATE MICROPHONES	9	9	9	14	11	10	18	MICROPHONES
F	318	F1-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT	3	8	7	10	8	8	6	
F	319	F1-06 DO YOU TROUBLESHOOT DOWN TO MICROPHONE PARTS	2	3	3	4	3	2	9	
F	320	F1-07 DO YOU REMOVE OR REPLACE COMPLETE MICROPHONES	4	6	6	11	9	8	9	
F	321	F1-08 DO YOU REMOVE OR REPLACE MICROPHONE PARTS	2	3	2	5	3	3	9	
F	322	F1-09 DO YOU PERFORM TASKS ON CARBON MICROPHONES	1	5	4	8	5	3	9	
F	323	F1-10 DO YOU PERFORM TASKS ON CAPACITOR MICROPHONES	2	3	3	7	5	3	9	
F	324	F1-11 DO YOU PERFORM TASKS ON CRYSTAL MICROPHONES	3	3	3	9	7	7	12	
F	325	F1-12 DO YOU PERFORM TASKS ON DYNAMIC MICROPHONES	3	5	4	10	7	5	6	
F	326	F1-13 DO YOU PERFORM TASKS ON VELOCITY RIBBON MICROPHONES	0	2	2	3	2	0	6	
F	327	F2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH SPEAKERS	17	15	16	20	20	13	15	
F	328	F2-02 DO YOU INSPECT SPEAKERS	14	13	13	16	16	11	12	
F	329	F2-03 DO YOU CLEAN SPEAKERS	11	10	10	9	10	7	9	
F	330	F2-04 DO YOU OPERATE SPEAKERS	15	15	15	18	17	13	15	SPEAKERS
F	331	F2-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT	14	14	14	14	16	13	9	
F	332	F2-06 DO YOU TROUBLESHOOT DOWN TO SPEAKER PARTS	4	3	3	3	3	5	6	
F	333	F2-07 DO YOU REMOVE OR REPLACE COMPLETE SPEAKERS	13	14	13	16	16	8	9	
F	334	F2-08 DO YOU REMOVE OR REPLACE SPEAKER PARTS	1	2	2	2	1	0	6	
F	335	F2-09 DO YOU PERFORM ANY TASKS ON SPEAKER CONES	4	2	2	4	1	2	3	
F	336	F2-10 DO YOU PERFORM ANY TASKS ON SPEAKER SPIDERS	1	1	1	1	1	2	3	
F	337	F2-11 DO YOU PERFORM ANY TASKS ON SPEAKER FIELD COILS	3	1	1	3	3	3	6	
F	338	F2-12 DO YOU PERFORM ANY TASKS ON SPEAKER VOICE COILS	3	1	2	4	4	3	6	
F	339	F2-13 DO YOU PERFORM ANY TASKS ON SPEAKER PERMANENT MAGNETS	3	1	2	3	2	2	6	
F	340	F2-14 DO YOU PERFORM ANY TASKS ON SPEAKER ELECTROMAGNETS	3	1	2	3	2	2	6	
F	341	F2-15 DO YOU PERFORM ANY TASKS ON SPEAKER SOFT IRON CORES	3	1	2	1	1	2	6	
F	342	F3-01 DO YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB	88	89	89	87	79	66	64	
F	343	F3-02 DO YOU USE OSCILLOSCOPES TO PERFORM OPERATIONAL CHECKS	88	90	88	90	78	64	61	
F	344	F3-03 DO YOU USE OSCILLOSCOPES TO PERFORM ALIGNMENTS OR ADJUSTMENTS	83	88	87	86	70	54	52	OSCILLOSCOPES
F	345	F3-04 DO YOU USE OSCILLOSCOPES TO TROUBLESHOOT ELECTRONIC CIRCUITS	85	87	87	89	70	56	55	
F	346	F3-05 DO YOU USE OSCILLOSCOPES TO MEASURE FREQUENCY	79	83	82	83	70	54	61	
F	347	F3-06 DO YOU USE OSCILLOSCOPES TO MEASURE TIME	75	84	82	84	75	62	64	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
F	348	F3-07 DO YOU USE OSCILLOSCOPES TO OBSERVE LISAJOUS PATTERNS	62	67	66	68	57	51	52	
F	349	F3-08 DO YOU USE OSCILLOSCOPES TO OBSERVE SIGNALS WHILE UTILIZING ATTENUATOR PROBES	78	87	84	88	76	62	61	
F	350	F3-09 DO YOU USE OSCILLOSCOPES TO MAKE FREQUENCY OR TIME MEASUREMENTS USING DELAY TIME MULTIPLIERS	62	71	68	75	67	57	58	
F	351	F3-10 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE	85	89	88	90	78	62	64	
F	352	F3-11 DO YOU USE OSCILLOSCOPES TO MEASURE OR OBSERVE SIGNALS AFTER FIRST ADJUSTING THE GAIN AND DC BAL CONTROLS	82	87	86	87	78	66	61	
F	353	F3-12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE	74	85	82	86	74	57	61	
G	354	G1-01 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT JOB	84	90	89	89	78	56	48	
G	355	G1-02 DO YOU INSPECT DIODES	85	88	87	87	73	54	55	
G	356	G1-03 DO YOU REMOVE OR REPLACE DIODES	84	88	87	86	69	52	42	SEMICONDUCTOR DIODES
G	357	G1-04 DO YOU CHECK DIODES USING AN INSTRUMENT	85	88	88	88	75	57	48	
G	358	G1-05 DO YOU USE ENERGY LEVEL DIAGRAMS IN YOUR WORK WITH DIODES	11	14	13	14	8	5	9	
G	359	G1-06 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES, TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE,	22	18	19	19	17	10	6	
G	360	G1-07 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR DIODES	37	27	29	25	20	8	9	
G	361	G1-08 DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES	71	65	66	70	64	56	48	
G	362	G1-09 DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO OTHER ELECTRONIC COMPONENTS, SUCH AS RESISTORS, BASED ON	79	84	83	85	74	56	58	
G	363	G1-10 DO YOU REFER TO OR DO YOU DETERMINE THE GENERAL EFFECTS OF DOPING ON CURRENT FLOW	17	15	16	19	7	5	3	
G	364	G1-11 DO YOU USE OR REFER TO MEASUREMENTS OF FORWARD BIAS RESISTANCE	70	74	73	75	71	43	42	
G	365	G1-12 DO YOU USE OR REFER TO DIODE COLOR CODING	90	95	93	94	51	38	45	
G	366	G1-13 DO YOU USE OR REFER TO CENTRIFUGAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS	1	2	2	3	1	0	3	
G	367	G1-14 DO YOU USE OR REFER TO CENTRIPETAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS	2	2	2	3	1	0	3	
G	368	G1-15 DO YOU USE OR REFER TO DIODE NUMBERING SYSTEM, SUCH AS IN 538	75	74	75	76	72	51	45	
G	369	G1-16 DO YOU USE OR REFER TO KINETIC ENERGY OF AN ELECTRON MOVING IN ORBIT	2	3	3	3	1	0	6	
G	370	G1-17 DO YOU USE OR REFER TO POTENTIAL ENERGY OF AN ELECTRON MOVING IN ORBIT	3	3	3	4	2	0	6	
G	371	G1-18 DO YOU USE OR REFER TO MEASUREMENTS OF REVERSE BIAS RESISTANCE	70	75	74	73	60	43	48	
G	372	G1-19 DO YOU USE OR REFER TO NUMBER OF ELECTRONS IN A PARTICULAR SHELL OR ORBIT	5	4	4	7	5	0	6	
G	373	G1-20 DO YOU USE OR REFER TO PERMISSIBLE ENERGY LEVELS OF AN ORBITING ELECTRON	3	3	3	5	3	0	6	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
G 374	G1-21 DO YOU USE OR REFER TO FORBIDDEN ENERGY LEVELS OF AN ORBITING ELECTRON	1	3	2	3	3	0	6
G 375	G1-22 DO YOU USE OR REFER TO VALENCE ELECTRONS (THOSE IN THE OUTERMOST SHELL)	10	5	6	7	6	2	6
G 376	G1-23 DO YOU USE OR REFER TO ATOMIC NUMBER (TOTAL NUMBER OF ELECTRONS IN ATOM)	10	6	7	6	7	2	6
G 377	G1-24 DO YOU USE OR REFER TO SYMBOLS ON THE DIODE WHICH INDICATE THE CATHODE END	83	82	82	80	74	51	55
G 378	G1-25 DO YOU NEED TO KNOW WHICH MATERIALS ARE USED IN THE CONSTRUCTION OF DIODES SUCH AS GERMANIUM OR SILICON	45	49	48	50	50	43	24
G 379	G1-26 DO YOU NEED TO KNOW THAT SEMICONDUCTORS HAVE NEGATIVE TEMPERATURE COEFFICIENTS OF RESISTANCE (AS TEMPERATURE	48	55	53	46	49	41	27
G 380	G1-27 DO YOU USE OR REFER TO PN JUNCTION DIODE CHARACTERISTIC CURVES, SUCH AS VOLTAGE - CURRENT	29	41	38	39	26	26	21
G 381	G1-28 DO YOU DETERMINE WHETHER PN JUNCTION DIODES ARE FORWARD BIASED OR REVERSE BIASED WHEN YOU READ OR	71	65	66	63	72	46	55
G 382	G1-29 DO YOU USE OR REFER TO VALENCE BAND IN SEMICONDUCTOR MATERIALS	4	5	5	7	5	2	3
G 383	G1-30 DO YOU USE OR REFER TO FORBIDDEN BAND IN SEMICONDUCTOR MATERIALS	0	3	2	6	2	0	3
G 384	G1-31 DO YOU USE OR REFER TO CONDUCTION BAND IN SEMICONDUCTOR MATERIALS	3	6	5	8	3	0	3
G 385	G1-32 DO YOU USE OR REFER TO COVALENT BONDING IN SEMICONDUCTOR MATERIALS	4	5	5	7	6	3	3
G 386	G1-33 DO YOU USE OR REFER TO ELECTRON-HOLE PAIR CREATED IN SEMICONDUCTORS	7	4	5	8	8	2	3
G 387	G1-34 DO YOU USE OR REFER TO ELECTRON FLOW OR HOLE FLOW IN SEMICONDUCTORS	16	15	16	20	19	15	15
G 388	G1-35 DO YOU USE OR REFER TO DONOR IMPURITY IN SEMICONDUCTORS	8	5	6	9	7	2	6
G 389	G1-36 DO YOU USE OR REFER TO ACCEPTOR IMPURITY IN SEMICONDUCTORS	8	5	6	8	7	2	6
G 390	G1-37 DO YOU USE OR REFER TO P-TYPE SEMICONDUCTOR MATERIAL	37	32	33	38	33	30	24
G 391	G1-38 DO YOU USE OR REFER TO N-TYPE SEMICONDUCTOR MATERIAL	37	31	33	38	33	30	24
G 392	G1-39 DO YOU USE OR REFER TO MAJORITY CARRIERS IN SEMICONDUCTORS	15	8	10	10	13	8	6
G 393	G1-40 DO YOU USE OR REFER TO MINORITY CARRIERS IN SEMICONDUCTORS	13	8	9	9	12	7	6
G 394	G1-41 DO YOU USE OR REFER TO JUNCTION RECOMBINATION IN SEMICONDUCTORS	11	6	7	7	7	3	6
G 395	G1-42 DO YOU USE OR REFER TO DEPLETION REGION IN SEMICONDUCTORS	12	8	9	11	11	7	9
G 396	G1-43 DO YOU USE OR REFER TO RELATIONSHIP BETWEEN BARRIER WIDTH AND DIFFERENCE OF POTENTIAL	12	8	9	11	11	8	6

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
G	397	G1-44 DO YOU USE OR REFER TO THE 10:1 BACK TO FRONT RESISTANCE RATIO FOR DIODES	84	86	86	84	76	57	55	
G	398	G1-45 DO YOU USE OR REFER TO BARRIER HEIGHT IN SEMICONDUCTORS	12	7	8	8	4	5	3	
G	399	G1-46 DO YOU USE OR REFER TO DIODE SUBSTITUTION INFORMATION	78	76	76	79	70	56	52	
G	400	G1-47 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD CURRENT DIODE RATINGS	48	46	47	48	61	41	42	
G	401	G1-48 DO YOU USE OR REFER TO PEAK RECURRENT FORWARD CURRENT DIODE RATINGS	34	35	35	39	42	25	27	
G	402	G1-49 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT DIODE RATINGS	42	42	42	50	50	31	33	
G	403	G1-50 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE DIODE RATINGS	59	55	55	61	70	48	52	
G	404	G2-01 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB.	86	89	88	88	76	56	45	
G	405	G2-02 DO YOU INSPECT TRANSISTORS	83	86	85	87	71	52	45	
G	406	G2-03 DO YOU REMOVE OR REPLACE TRANSISTORS	86	88	88	86	66	51	39	
G	407	G2-04 DO YOU CHECK TRANSISTORS USING AN INSTRUMENT	86	88	88	88	72	54	55	TRANSISTORS
G	408	G2-05 DO YOU USE OR REFER TO EMITTER - BASE (EB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	85	86	85	86	75	54	52	
G	409	G2-06 DO YOU USE OR REFER TO COLLECTOR - BASE (CB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	84	86	85	87	76	54	55	
G	410	G2-07 DO YOU USE OR REFER TO EMITTER - COLLECTOR (EC) RESISTANCE MEASUREMENTS	84	85	84	86	75	52	55	
G	411	G2-08 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE EMITTER - BASE JUNCTION	22	27	25	22	20	8	12	
G	412	G2-09 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE COLLECTOR - BASE JUNCTION	21	26	24	22	20	8	12	
G	413	G2-10 DO YOU USE OR REFER TO THE PHYSICAL SIZE OF THE TRANSISTOR STRUCTURE (COLLECTOR, BASE AND EMITTER)	50	61	58	59	43	33	21	
G	414	G2-11 DO YOU USE OR REFER TO LEAKAGE CURRENT (ICBO) IN A TRANSISTOR	34	32	32	33	39	26	24	
G	415	G2-12 DO YOU USE OR REFER TO TRANSISTOR SCHEMATIC SYMBOLS	88	91	90	89	77	57	55	
G	416	G2-13 DO YOU USE OR REFER TO TRANSISTOR NOTATION SUCH AS Q1, Q2, Q3, ETC	88	90	90	90	78	61	56	
G	417	G2-14 DO YOU USE OR REFER TO TRANSISTOR SUBSTITUTION INFORMATION	83	82	82	83	73	56	56	
G	418	G2-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE TRANSISTOR BASE CURRENT IB IS NORMALLY SIGNIFICANTLY	39	39	39	39	42	25	27	
G	419	G2-16 DO YOU USE THE INFORMATION THAT THE EFFECT OF EMITTER BASE VOLTAGE ON BASE CURRENT IS THE CONTROLLING FACTOR FOR	60	55	55	51	59	44	33	
G	420	G2-17 DO YOU USE THE GENERAL RULE THAT LEAKAGE CURRENT (ICBO) IN A TRANSISTOR INCREASES AS TEMPERATURE INCREASES	34	30	30	27	39	25	21	
G	421	G2-18 DO YOU USE OR REFER TO TRANSISTOR CHARACTERISTIC CURVES	46	49	48	46	38	33	21	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
G 422	G2-19	DO YOU USE OR REFER TO BETA TRANSISTOR GAINS	25	21	22	21	30	21	24	
G 423	G2-20	DO YOU USE OR REFER TO ALPHA TRANSISTOR GAINS	21	15	16	14	24	18	12	
G 424	G2-21	DO YOU USE OR REFER TO GAMMA TRANSISTOR GAINS	18	13	14	10	23	15	9	
G 425	G2-22	DO YOU CALCULATE BETA TRANSISTOR GAINS	13	10	11	7	8	7	9	
G 426	G2-23	DO YOU CALCULATE ALPHA TRANSISTOR GAINS	13	8	9	5	7	5	6	
G 427	G2-24	DO YOU CALCULATE GAMMA TRANSISTOR GAINS	10	7	7	3	5	3	6	
G 428	G3-01	DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR PRESENT JOB	72	76	75	84	72	54	48	
G 429	G3-02	DO YOU INSPECT TRANSISTOR AMPLIFIERS	70	75	73	82	67	51	48	
G 430	G3-03	DO YOU ALIGN OR ADJUST TRANSISTOR AMPLIFIERS	65	72	70	78	61	48	45	
G 431	G3-04	DO YOU TROUBLESHOOT TO THE AMPLIFIER CIRCUIT LEVEL	71	76	74	80	64	49	52	
G 432	G3-05	DO YOU TROUBLESHOOT TO AMPLIFIER COMPONENTS	70	76	74	80	66	51	48	TRANSISTOR AMPLIFIERS
G 433	G3-06	DO YOU REMOVE OR REPLACE THE COMPLETE AMPLIFIER	64	64	64	73	53	34	36	
G 434	G3-07	DO YOU REMOVE OR REPLACE AMPLIFIER COMPONENTS	70	74	73	80	58	48	42	
G 435	G3-08	DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A CHANGE IN BASE	45	42	42	39	51	23	33	
G 436	G3-09	DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN	24	18	20	13	21	8	12	
G 437	G3-10	DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A CHANGE IN BASE	41	40	40	39	49	28	27	
G 438	G3-11	DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN	22	16	17	16	21	10	9	
G 439	G3-12	DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN BASE CURRENT WHICH RESULTS FROM AN INPUT SIGNAL	37	37	37	35	45	20	24	
G 440	G3-13	DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN	21	20	20	13	21	10	12	
G 441	G3-14	DO YOU USE THE LOAD-LINE METHOD OF ANALYSIS IN YOUR CIRCUIT ANALYSIS (THIS METHOD REQUIRES YOU TO PLOT A	11	8	9	5	7	3	6	
G 442	G3-15	DO YOU USE OR REFER TO THE OPERATING POINT Q (QUIESCENT POINT) FOR A TRANSISTOR	27	27	27	26	30	16	18	
G 443	G3-16	DO YOU CALCULATE THE SPECIFIC QUIESCENT POINT FOR A PARTICULAR TRANSISTOR	10	8	9	5	6	5	6	
G 444	G3-17	DO YOU MEASURE VOLTAGE GAIN USED IN THE COMMON EMITTER CONFIGURATION	59	59	59	67	58	44	39	
G 445	G3-18	DO YOU MEASURE CURRENT GAIN USED IN THE COMMON EMITTER CONFIGURATION	45	39	40	37	37	28	18	
G 446	G3-19	DO YOU MEASURE POWER GAIN USED IN THE COMMON EMITTER CONFIGURATION	41	37	37	38	34	30	27	
G 447	G3-20	DO YOU CALCULATE THE VOLTAGE GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE	15	16	16	12	19	11	12	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
G 448	G3-21 DO YOU CALCULATE THE CURRENT GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE	16	12	13	9	14	5	9
G 449	G3-22 DO YOU CALCULATE THE POWER GAIN FOR A SPECIFIC TRANSISTOR USING A FORMULA THAT IS, DO YOU MULTIPLY THE	13	9	10	8	12	3	6
G 450	G3-23 DO YOU NEED TO KNOW THAT MORE COLLECTOR CURRENT IS GENERATED WITH LESS COLLECTOR VOLTAGE AS TEMPERATURE	25	16	18	17	24	15	9
G 451	G3-24 DO YOU COMPUTE THE STATIC OPERATING POINT (Q) OF A TRANSISTOR AT DIFFERENT TEMPERATURES	7	6	6	3	4	2	3
G 452	G3-25 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH	42	37	38	39	48	28	18
G 453	G3-26 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH SELF-	43	37	39	40	45	28	24
G 454	G3-27 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH	39	38	38	42	45	28	15
G 455	G3-28 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH	43	37	39	44	47	24	18
G 456	G3-29 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH	42	36	37	43	45	25	21
G 457	G3-30 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH	37	29	31	37	41	18	18
G 458	G3-31 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM EMITTER (SWAMPING) RESISTOR STABILIZATION	50	46	47	48	48	36	29
G 459	G3-32 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM SELF-BIAS STABILIZATION	51	47	48	50	47	34	27
G 460	G3-33 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THERMISTOR STABILIZATION	48	50	49	52	48	34	18
G 461	G3-34 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM FORWARD BIAS DIODE STABILIZATION	50	47	48	51	47	34	21
G 462	G3-35 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM REVERSE BIAS DIODE STABILIZATION	49	48	48	50	45	33	21
G 463	G3-36 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM DOUBLE DIODE STABILIZATION	43	41	42	45	43	25	21
G 464	G3-37 DO YOU IDENTIFY AMPLITUDE DISTORTION FOR TRANSISTOR CIRCUITS	60	62	61	65	64	44	45
G 465	G3-38 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF AMPLITUDE DISTORTION	55	65	63	69	59	43	45

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
G	466	G3-39 DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS	50	53	52	61	51	39	39	
G	467	G3-40 DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS	37	35	35	35	38	25	24	
G	468	G3-41 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF PHASE DISTORTION	36	36	36	31	32	23	24	
G	469	G3-42 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF FREQUENCY DISTORTION	47	51	50	60	49	38	39	
G	470	G3-43 DO YOU NEED TO KNOW THE DEGENERATIVE EFFECTS ON THE CIRCUIT CAUSED BY CHANGING EMITTER RESISTANCE FOR	29	25	26	31	36	16	12	
G	471	G3-44 DO YOU DETERMINE THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS	37	38	37	36	38	26	24	
G	472	G3-45 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	49	57	55	69	53	43	30	
G	473	G3-46 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	67	73	71	79	64	49	48	
G	474	G3-47 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY CIRCUITS	53	54	53	58	55	44	30	
G	475	G3-48 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	42	56	53	60	53	36	21	
G	476	G3-49 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	62	67	66	74	61	49	39	
H	477	H1-01 DO YOU USE OR REFER TO VARACTORS	53	39	42	47	60	57	52	
H	478	H1-02 DO YOU USE OR REFER TO TUNNEL DIODES	67	75	73	80	77	69	70	
H	479	H1-03 DO YOU USE OR REFER TO FIELD EFFECT TRANSISTORS (FET)	77	81	80	83	84	74	76	SOLID-STATE SPECIAL PURPOSE DEVICES
H	480	H1-04 DO YOU USE OR REFER TO UNIJUNCTION TRANSISTORS	66	71	70	73	76	66	73	
H	481	H1-05 DO YOU USE OR REFER TO ZENER DIODES	88	90	89	92	84	80	73	
H	482	H1-06 DO YOU USE OR REFER TO INTEGRATED CIRCUITS	84	86	86	90	84	77	73	
H	483	H2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH POWER SUPPLIES	83	83	83	87	74	54	52	
H	484	H2-02 DO YOU INSPECT POWER SUPPLIES	83	83	83	86	71	49	55	
H	485	H2-03 DO YOU CLEAN POWER SUPPLIES	77	71	72	70	53	38	36	
H	486	H2-04 DO YOU ALIGN OR ADJUST POWER SUPPLIES	84	83	83	84	70	51	45	
H	487	H2-05 DO YOU TROUBLESHOOT TO POWER SUPPLY CIRCUIT LEVEL	83	84	84	83	70	46	48	POWER SUPPLIES
H	488	H2-06 DO YOU TROUBLESHOOT TO POWER SUPPLY COMPONENTS	83	84	84	82	70	52	45	
H	489	H2-07 DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES	66	75	72	69	56	34	42	
H	490	H2-08 DO YOU REMOVE OR REPLACE POWER SUPPLY COMPONENTS	84	83	83	82	62	46	42	
H	491	H2-09 DO YOU WORK WITH HALF-WAVE RECTIFIERS	78	82	81	86	73	51	48	
H	492	H2-10 DO YOU WORK WITH FULL-WAVE RECTIFIERS OTHER THAN BRIDGE RECTIFIERS	76	81	80	84	72	49	45	
H	493	H2-11 DO YOU WORK WITH BRIDGE RECTIFIERS	80	79	80	82	74	54	42	
H	494	H2-12 DO YOU WORK WITH THREE-PHASE RECTIFIERS	34	26	28	27	26	20	9	
H	495	H2-13 DO YOU USE OR REFER TO INPUT VOLTAGE	80	83	82	84	78	52	61	
H	496	H2-14 DO YOU USE OR REFER TO INPUT FREQUENCY	65	72	70	76	70	48	55	
H	497	H2-15 DO YOU USE OR REFER TO PEAK OUTPUT VOLTAGE	65	71	69	69	68	41	55	
H	498	H2-16 DO YOU USE OR REFER TO AVERAGE OUTPUT VOLTAGE	62	70	67	73	72	46	61	
H	499	H2-17 DO YOU USE OR REFER TO RIPPLE AMPLITUDE	76	80	79	81	77	52	58	
H	500	H2-18 DO YOU USE OR REFER TO RIPPLE FREQUENCY	66	74	72	73	72	48	58	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
H 501	H2-19 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE	54	51	52	53	55	38	39	
H 502	H2-20 DO YOU USE OR REFER TO SHAPE OF OUTPUT WAVEFORMS	76	78	77	80	74	51	58	
H 503	H2-21 DO YOU USE OR REFER TO EFFECTIVE OUTPUT VOLTAGE	77	74	76	75	68	56	55	
H 504	H2-22 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE FILTERS	71	75	74	75	72	52	55	
H 505	H2-23 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE FILTERS	66	67	67	68	70	52	55	
H 506	H2-24 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE INPUT L-TYPE FILTERS	57	65	63	65	67	51	55	
H 507	H2-25 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE INPUT L-TYPE FILTERS	55	62	60	63	64	51	52	
H 508	H2-26 DO YOU WORK WITH CIRCUITS WHICH EMPLOY LC PI-TYPE FILTERS	57	60	59	64	66	51	52	
H 509	H2-27 DO YOU WORK WITH CIRCUITS WHICH EMPLOY RC PI-TYPE FILTERS	59	63	62	70	68	51	52	
H 510	H2-28 DO YOU WORK WITH CIRCUITS WHICH EMPLOY DON'T REMEMBER WHICH TYPE OF FILTER	20	27	25	21	11	7	6	
H 511	H2-29 DO YOU HAVE THE OPTION OF REPLACING ONE TYPE OF FILTER WITH A DIFFERENT TYPE FILTER	9	13	11	12	8	5	3	
H 512	H3-01 DO YOU WORK WITH OSCILLATORS IN YOUR PRESENT JOB	62	74	72	82	67	54	55	
H 513	H3-02 DO YOU INSPECT OSCILLATORS	59	72	69	79	62	52	58	
H 514	H3-03 DO YOU ALIGN OR ADJUST OSCILLATORS	60	71	69	78	60	48	48	
H 515	H3-04 DO YOU REMOVE OR REPLACE COMPLETE OSCILLATORS	49	62	59	65	45	34	33	
H 516	H3-05 DO YOU REMOVE OR REPLACE OSCILLATOR COMPONENTS	57	69	66	72	53	46	42	OSCILLATORS
H 517	H3-06 DO YOU TROUBLESHOOT TO OSCILLATOR CIRCUIT LEVEL	58	70	67	75	58	49	52	
H 518	H3-07 DO YOU TROUBLESHOOT TO OSCILLATOR COMPONENTS	55	70	67	76	60	51	52	
H 519	H3-08 DO YOU USE OR REFER TO FEEDBACK	60	73	70	81	65	52	48	
H 520	H3-09 DO YOU USE OR REFER TO FREQUENCY DETERMINING DEVICES (FDD)	54	64	61	77	65	52	45	
H 521	H3-10 DO YOU USE OR REFER TO AMPLITUDE STABILITY	55	71	67	76	67	51	52	
H 522	H3-11 DO YOU USE OR REFER TO FREQUENCY STABILITY	55	72	68	78	68	57	48	
H 523	H3-12 DO YOU USE OR REFER TO DAMPING	46	55	52	58	52	41	27	
H 524	H3-13 DO YOU USE OR REFER TO REGENERATIVE FEEDBACK	59	68	66	76	65	52	42	
H 525	H3-14 DO YOU USE OR REFER TO PIEZOELECTRIC EFFECT	27	33	32	36	39	34	27	
H 526	H3-15 DO YOU USE OR REFER TO CRITICAL DAMPING	33	33	33	37	36	26	15	
H 527	H3-16 DO YOU USE OR REFER TO UNDER DAMPING	27	31	30	34	37	23	12	
H 528	H3-17 DO YOU USE OR REFER TO OVER DAMPING	27	32	31	35	37	23	12	
H 529	H3-18 DO YOU WORK WITH OSCILLATORS WHICH USE LC TANK CIRCUITS AS FDD	43	47	46	55	39	34	39	
H 530	H3-19 DO YOU WORK WITH OSCILLATORS WHICH USE RC NETWORKS AS FDD	55	67	64	76	68	49	52	
H 531	H3-20 DO YOU WORK WITH OSCILLATORS WHICH USE CRYSTALS AS FDD	57	67	65	74	67	51	45	
H 532	H3-21 DO YOU WORK WITH OSCILLATORS WHICH USE DON'T REMEMBER WHICH TYPE OF FDD	7	15	13	10	7	2	6	
H 533	H3-22 DO YOU WORK WITH SERIES HARTLEY SINUSOIDAL OSCILLATORS	48	47	48	61	56	46	30	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
H	534	H3-23 DO YOU WORK WITH SHUNT HARTLEY SINUSOIDAL OSCILLATORS	45	48	47	58	51	43	33	
H	535	H3-24 DO YOU WORK WITH COLPITTS SINUSOIDAL OSCILLATORS	49	47	48	59	56	48	33	
H	536	H3-25 DO YOU WORK WITH CLAPP SINUSOIDAL OSCILLATORS	17	25	23	30	26	21	15	
H	537	H3-26 DO YOU WORK WITH BUTLER SINUSOIDAL OSCILLATORS	17	23	21	29	25	18	12	
H	538	H3-27 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF OSCILLATORS	16	32	28	27	18	7	21	
I	539	I1-01 DO YOU WORK WITH MULTIVIBRATORS IN YOUR PRESENT JOB	54	69	61	77	67	44	42	
I	540	I1-02 DO YOU INSPECT WAVE GENERATING OR SHAPING CIRCUITS	57	64	62	73	66	49	48	
I	541	I1-03 DO YOU ALIGN OR ADJUST WAVE GENERATING OR SHAPING CIRCUITS	54	63	61	73	64	48	42	MULTIVIBRATORS
I	542	I1-04 DO YOU CALIBRATE WAVE GENERATING OR SHAPING CIRCUITS	51	62	59	73	62	46	42	
I	543	I1-05 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUITS	54	65	62	73	62	49	52	
I	544	I1-06 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUIT COMPONENTS	54	63	61	71	61	51	52	
I	545	I1-07 DO YOU REMOVE OR REPLACE COMPLETE WAVE GENERATING OR SHAPING CIRCUITS	46	53	51	56	48	31	36	
I	546	I1-08 DO YOU REMOVE OR REPLACE WAVE GENERATING OR SHAPING COMPONENTS	54	61	59	69	55	44	42	
I	547	I1-09 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK CIRCUITS	45	55	52	61	56	41	30	
I	548	I1-10 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN RC NETWORKS	50	60	57	69	66	52	42	
I	549	I1-11 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN CRYSTALS	42	52	50	58	50	48	24	
I	550	I1-12 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN DON'T REMEMBER WHICH TYPE OF FDD	14	13	13	15	9	2	12	
I	551	I1-13 DO YOU WORK WITH ASTABLE MULTIVIBRATORS	48	56	54	67	66	51	45	
I	552	I1-14 DO YOU WORK WITH MONOSTABLE MULTIVIBRATORS	50	56	55	67	67	51	42	
I	553	I1-15 DO YOU WORK WITH BISTABLE MULTIVIBRATORS	51	57	55	69	67	51	42	
I	554	I1-16 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE MULTIVIBRATORS	8	13	11	9	7	3	9	
I	555	I2-01 DO YOU WORK WITH LIMITERS OR CLAMPERS IN YOUR PRESENT JOB	48	58	55	64	62	46	33	
I	556	I2-02 DO YOU WORK WITH SERIES DIODE LIMITERS	46	48	48	58	57	43	33	LIMITERS AND CLAMPERS
I	557	I2-03 DO YOU WORK WITH SHUNT DIODE LIMITERS	45	47	47	54	61	41	30	
I	558	I2-04 DO YOU WORK WITH LIMITERS WITH BIAS	38	44	42	53	56	34	30	
I	559	I2-05 DO YOU WORK WITH ZENER DIODE LIMITERS	46	52	50	57	60	46	33	
I	560	I2-06 DO YOU WORK WITH TRANSISTOR LIMITERS	41	49	47	53	56	34	30	
I	561	I2-07 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF LIMITERS	4	12	10	10	9	3	6	
I	562	I2-08 DO YOU WORK WITH BASIC DIODE CLAMPING CIRCUITS	41	47	46	54	60	41	33	
I	563	I2-09 DO YOU WORK WITH DIODE CLAMPING CIRCUITS WITH BIAS	39	44	43	54	57	39	27	
I	564	I2-10 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF CLAMPING CIRCUIT	8	15	13	13	8	3	3	
I	565	I3-01 IN YOUR PRESENT JOB, DO YOU WORK ON EQUIPMENT WHICH CONTAINS ELECTRON TUBES	90	86	87	88	73	54	52	
I	566	I3-02 DO YOU CHECK ELECTRON TUBES TO SEE IF THEY ARE GOOD	86	83	84	80	70	52	45	ELECTRON TUBES

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
I 567	13-03 DO YOU USE TUBE TESTERS TO CHECK ELECTRON TUBES	87	81	82	80	70	52	42
I 568	13-04 DO YOU USE MULTIMETERS TO CHECK ELECTRON TUBES	54	53	53	52	55	41	27
I 569	13-05 DO YOU USE SCOPES TO CHECK ELECTRON TUBES	53	60	59	66	53	44	30
I 570	13-06 DO YOU USE SUBSTITUTION TO CHECK ELECTRON TUBES	84	85	85	82	68	56	52
I 571	13-07 DO YOU USE OR REFER TO CUTOFF	51	53	52	55	50	33	33
I 572	13-08 DO YOU USE OR REFER TO PEAK INVERSE VOLTAGE RATING	30	23	24	25	23	13	18
I 573	13-09 DO YOU USE OR REFER TO PEAK CURRENT RATING	32	28	29	25	25	13	15
I 574	13-10 DO YOU USE OR REFER TO TRANSIT TIME	22	23	22	22	18	8	6
I 575	13-11 DO YOU USE OR REFER TO PLATE DISSIPATION RATING	28	21	22	23	21	13	15
I 576	13-12 DO YOU USE OR REFER TO SATURATION	51	46	48	50	45	25	30
I 577	13-13 DO YOU USE OR REFER TO DC PLATE RESISTANCE	39	36	36	33	32	21	30
I 578	13-14 DO YOU COMPUTE ACTUAL VALUES OF THE DC PLATE RESISTANCE FOR ELECTRON TUBES	8	8	7	5	6	3	3
I 579	13-15 DO YOU USE OR REFER TO PLATE VOLTAGE	83	81	82	84	72	57	52
I 580	13-16 DO YOU USE OR REFER TO PLATE CURRENT	63	58	60	55	53	44	33
I 581	13-17 DO YOU USE OR REFER TO GRID VOLTAGE	82	80	81	82	72	56	52
I 582	13-18 DO YOU USE OR REFER TO GRID CURRENT	59	54	55	54	51	41	30
I 583	13-19 DO YOU USE OR REFER TO CATHODE VOLTAGE	79	81	81	82	72	57	52
I 584	13-20 DO YOU USE OR REFER TO CATHODE CURRENT	60	56	57	52	53	44	36
I 585	13-21 DO YOU USE OR REFER TO THE TRIODE AMPLIFICATION FACTOR (THE AMPLIFICATION FACTOR FOR TRIODES IS DEFINED AS	27	30	29	25	32	26	21
I 586	13-22 DO YOU CALCULATE ACTUAL VALUES OF TRIODE AMPLIFICATION FACTORS	14	11	12	8	14	3	6
I 587	13-23 DO YOU USE OR REFER TO MULTIGRID (TETRODE, PENTODE, ETC) AMPLIFICATION FACTORS	29	24	25	24	29	18	15
I 588	13-24 DO YOU USE OR REFER TO ELECTRON TUBE TRANSCONDUCTANCE (G, WHICH IS MEASURED IN MHOS)	21	12	14	11	16	11	12
I 589	13-25 DO YOU CALCULATE ACTUAL VALUES OF ELECTRON TUBE TRANSCONDUCTANCES	12	7	8	5	5	2	3
I 590	13-26 DO YOU USE OR REFER TO THE ELECTRON TUBE PARAMETER CALLED AC PLATE RESISTANCE	24	16	18	12	16	10	9
I 591	13-27 DO YOU CALCULATE ACTUAL VALUES OF AC PLATE RESISTANCE	14	8	9	9	5	2	3
I 592	13-28 DO YOU USE OR REFER TO ELECTRON TUBE INTERELECTRODE CAPACITANCE	34	29	31	33	41	31	27
I 593	13-29 DO YOU USE OR REFER TO CHARACTERISTIC CURVES IN YOUR WORK WITH ELECTRON TUBES	22	18	19	15	18	18	12
I 594	13-30 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE VOLTAGE FOR A SPECIFIED BIAS	18	15	16	12	12	8	12
I 595	13-31 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE CURRENT FOR A SPECIFIED BIAS	17	12	13	10	12	8	6
I 596	13-32 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR CUTOFF	23	19	20	15	19	11	12
I 597	13-33 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR SATURATION	23	18	19	19	18	10	9

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
I 598	I3-34 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER GAIN	70	67	68	67	64	51	39	
I 599	I3-35 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER EFFICIENCY	45	37	39	34	23	20	6	
I 600	I3-36 DO YOU USE TEST TUBE CHECKERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	67	63	64	59	51	41	27	
I 601	I3-37 DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	50	48	48	48	39	30	15	
I 602	I3-38 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	58	63	61	64	59	48	52	
I 603	I3-39 DO YOU USE CHARACTERISTIC CURVES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	20	16	17	14	12	13	9	
I 604	I3-40 DO YOU CALCULATE ANY ELECTRON TUBE CAPACITANCES SUCH AS INPUT CAPACITANCE	9	8	8	6	4	0	0	
I 605	I3-41 DO YOU USE OR REFER TO TUBE SOCKET NOTATION	79	83	82	82	67	54	55	
I 606	I3-42 DO YOU USE OR REFER TO PIN NUMBERING SYSTEMS	87	84	85	84	72	54	55	
I 607	I3-43 DO YOU USE OR REFER TO THE TYPE OF MATERIAL OR THE OPERATING TEMPERATURE OF THE EMITTING SURFACE IN THE	11	8	9	8	5	2	6	
I 608	I3-44 DO YOU USE OR REFER TO TUBE SUBSTITUTION MATERIAL SUCH AS MANUALS OR CHARTS	82	74	76	77	68	51	48	
J 609	J1-01 DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS IN YOUR PRESENT JOB	78	78	78	81	71	56	45	
J 610	J1-02 DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER	42	37	39	35	34	25	21	ELECTRON TUBE AMPLIFIERS AND CIRCUITS
J 611	J1-03 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	49	56	54	65	54	43	33	
J 612	J1-04 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	72	68	69	70	65	48	48	
J 613	J1-05 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	43	51	49	54	51	33	27	
J 614	J1-06 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	64	61	62	63	57	44	30	
J 615	J1-07 DO YOU TROUBLESHOOT OR REPAIR DON'T KNOW WHICH TYPE OF AMPLIFIER	18	22	21	16	11	7	6	
J 616	J2-01 DO YOU WORK WITH GAS TUBES (HOT CATHODE OR COLD CATHODE)	75	71	72	72	70	52	55	
J 617	J2-02 DO YOU WORK WITH CATHODE-RAY TUBES	66	67	67	73	67	51	55	
J 618	J2-03 DO YOU USE OR REFER TO THE CHARACTERISTICS OF BEAM POWER TUBES	26	18	20	21	23	26	15	SPECIAL PURPOSE ELECTRON TUBES
J 619	J2-04 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH BEAM POWER TUBES ARE USED	37	31	33	36	44	38	30	
J 620	J2-05 DO YOU USE OR REFER TO THE CHARACTERISTICS OF THYRATRONS	35	26	28	29	33	39	33	
J 621	J2-06 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH THYRATRONS ARE USED	39	36	37	42	47	41	42	
J 622	J2-07 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTRON GUNS OF CATHODE-RAY TUBES (CRT)	43	47	46	53	54	41	39	
J 623	J2-08 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROMAGNETIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES	41	42	43	43	46	41	33	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
J 629	J2-09 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES	42	47	46	48	58	48	45	
J 625	J2-10 DO YOU USE OR REFER TO PHOSPHOR SCREENS	52	53	53	57	54	44	42	
J 626	J2-11 DO YOU USE OR REFER TO AQUADAG COATINGS	41	33	36	37	45	34	42	
J 627	J2-12 DO YOU USE OR REFER TO ELECTRON OPTICS	21	16	17	16	17	11	18	
J 628	J2-13 DO YOU USE OR REFER TO PERSISTENCE	41	42	42	48	51	44	45	
J 629	J2-14 DO YOU USE OR REFER TO DECAY TIMES	35	37	37	42	34	26	36	
J 630	J2-15 DO YOU USE OR REFER TO FLUORESCENCE	32	31	32	35	34	25	33	
J 631	J2-16 DO YOU USE OR REFER TO PHOSPHORESCENCE	37	39	39	39	43	30	33	
J 632	J3-01 DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	36	38	37	50	43	30	16	
J 633	J3-02 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	36	37	36	47	43	28	18	
J 634	J3-03 DO YOU PERFORM TASKS ON FREQUENCY MIXERS	36	37	37	46	43	26	18	HETERODYNING, MODULATION, AND DEMODULATION
J 635	J3-04 DO YOU USE OR REFER TO THE HETERODYNING OF SIGNALS IN YOUR WORK WITH TRANSMIT OR RECEIVE SYSTEMS	28	31	30	44	43	28	15	
J 636	J3-05 DO YOU PERFORM TASKS ON REACTANCE MODULATORS	22	19	19	23	28	16	12	
J 637	J3-06 DO YOU PERFORM TASKS ON MODULATED OSCILLATORS	29	32	32	42	40	24	15	
K 638	K1-01 DO YOU WORK ON AM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	25	31	29	40	36	23	9	
K 639	K1-02 DO YOU INSPECT AM TRANSMIT OR RECEIVE SYSTEMS	22	31	29	38	36	23	12	AM SYSTEMS
K 640	K1-03 DO YOU CLEAN AM TRANSMIT OR RECEIVE SYSTEMS	18	28	26	33	26	21	12	
K 641	K1-04 DO YOU ALIGN OR ADJUST AM TRANSMIT OR RECEIVE SYSTEMS	21	31	28	36	34	23	12	
K 642	K1-05 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE SYSTEMS	20	31	28	37	34	21	12	
K 643	K1-06 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE COMPONENTS	21	31	28	37	35	21	12	
K 644	K1-07 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE SYSTEMS	18	27	24	32	26	16	12	
K 645	K1-08 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE COMPONENTS	21	30	27	37	34	21	12	
K 646	K1-09 DO YOU PERFORM TASKS ON RF OSCILLATORS	25	32	30	39	36	21	12	
K 647	K1-10 DO YOU PERFORM TASKS ON RF AMPLIFIERS	25	32	30	39	36	21	12	
K 648	K1-11 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	23	31	29	39	36	21	12	
K 649	K1-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS	23	29	27	37	36	21	12	
K 650	K1-13 DO YOU PERFORM TASKS ON LOCAL OSCILLATORS	23	31	29	39	36	23	12	
K 651	K1-14 DO YOU PERFORM TASKS ON IF AMPLIFIERS	22	32	29	39	36	21	12	
K 652	K1-15 DO YOU PERFORM TASKS ON DETECTORS	23	31	29	39	36	21	12	
K 653	K1-16 DO YOU PERFORM TASKS ON DON'T REMEMBER WHICH AM STAGE	1	4	3	4	4	3	3	
K 654	K1-17 DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN TRANSMITTERS	17	22	20	34	26	13	9	
K 655	K1-18 DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN TRANSMITTERS	21	23	22	34	28	15	9	
K 656	K1-19 DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS	23	28	26	40	34	23	12	
K 657	K1-20 DO YOU USE OR REFER TO SELECTIVITY OF RECEIVERS	22	25	24	37	32	21	12	
K 658	K1-21 DO YOU USE OR REFER TO 2ND HARMONIC DISTORTION	14	20	19	25	24	15	9	
K 659	K1-22 DO YOU USE OR REFER TO BANDPASS DISTORTION	18	21	20	29	24	15	9	
K 660	K1-23 DO YOU USE OR REFER TO SQUARE LAW DISTORTION	10	11	10	21	18	11	9	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
K 661	K1-24 DO YOU USE OR REFER TO CO-CHANNEL INTERFERENCE	11	11	11	15	13	7	9	
K 662	K1-25 DO YOU USE OR REFER TO IMAGE FREQUENCIES IN RECEIVERS	10	11	11	20	19	10	9	
K 663	K1-26 DO YOU USE OR REFER TO SIGNAL TO IMAGE RATIOS OR IMAGE REJECTION RATIOS	11	13	12	18	18	11	6	
K 664	K1-27 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM TRANSMITTER SCHEMATIC DIAGRAMS	22	27	25	36	32	18	9	
K 665	K1-28 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM RECEIVER SCHEMATIC DIAGRAMS	22	27	26	38	35	23	12	
K 666	K2-01 DO YOU WORK WITH FM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	20	27	25	34	29	20	9	
K 667	K2-02 DO YOU INSPECT FM TRANSMIT OR RECEIVE SYSTEMS	20	26	24	31	27	18	3	
K 668	K2-03 DO YOU CLEAN FM TRANSMIT OR RECEIVE SYSTEMS	18	24	23	25	17	16	6	FM SYSTEMS
K 669	K2-04 DO YOU ALIGN FM TRANSMIT OR RECEIVE SYSTEMS	20	26	24	29	24	18	6	
K 670	K2-05 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE SYSTEMS	20	25	24	29	23	18	6	
K 671	K2-06 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE COMPONENTS	18	25	23	29	25	18	6	
K 672	K2-07 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE SYSTEMS	16	22	21	25	18	16	6	
K 673	K2-08 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE COMPONENTS	[illegible]	25	23	27	24	18	6	
K 674	K2-09 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	20	25	23	30	26	18	9	
K 675	K2-10 DO YOU PERFORM TASKS ON FREQUENCY MULTIPLIERS	20	24	23	29	26	18	9	
K 676	K2-11 DO YOU PERFORM TASKS ON DRIVERS (INTERMEDIATE AMPLIFIERS)	18	25	23	29	24	18	9	
K 677	K2-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS	18	25	23	29	26	18	9	
K 678	K2-13 DO YOU PERFORM TASKS ON RF AMPLIFIERS	18	26	24	30	26	18	9	
K 679	K2-14 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	18	26	24	29	26	18	9	
K 690	K2-15 DO YOU PERFORM TASKS ON IF AMPLIFIERS	21	26	25	31	26	18	9	
K 681	K2-16 DO YOU PERFORM TASKS ON LIMITERS	17	24	22	28	26	18	9	
K 682	K2-17 DO YOU PERFORM TASKS ON FREQUENCY DISCRIMINATORS	18	25	23	29	27	18	9	
K 683	K2-18 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSMITTERS	20	24	23	29	27	16	6	
K 684	K2-19 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM RECEIVERS	18	25	23	30	26	20	6	
K 685	K3-01 DO YOU CONVERT DECIMAL (BASE 10) NUMBERS TO OCTAL (BASE 8) NUMBERS	13	13	13	19	23	10	6	
K 686	K3-02 DO YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2) NUMBERS	29	31	31	35	39	31	24	NUMBERING SYSTEMS
K 687	K3-03 DO YOU CONVERT OCTAL NUMBERS TO DECIMAL NUMBERS	12	11	11	19	21	10	3	
K 688	K3-04 DO YOU CONVERT OCTAL NUMBERS TO BINARY NUMBERS	9	11	10	16	20	8	6	
K 689	K3-05 DO YOU CONVERT BINARY NUMBERS TO DECIMAL NUMBERS	30	29	29	33	36	34	27	
K 690	K3-06 DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS	9	12	11	16	20	8	9	
K 691	K3-07 DO YOU ADD BINARY NUMBERS TO GET A SUM	26	23	24	31	25	21	21	
K 692	K3-08 DO YOU SUBRRACT BINARY NUMBERS USING THE END-AROUND-CARRY METHOD	14	12	12	18	14	10	12	
K 693	K3-09 DO YOU SUBTRACT BINARY NUMBERS USING THE DIRECT SUBTRACTION METHOD	22	15	17	23	19	11	12	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
K 694	K3-10 DO YOU ADD OCTAL NUMBERS TO GET A SUM	11	8	9	13	11	8	3	
L 695	L1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO LOGIC FUNCTIONS	39	44	42	46	47	38	24	
L 696	L1-02 DO YOU CONSTRUCT TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES	21	21	21	26	16	15	6	LOGIC FUNCTIONS
L 697	L1-03 DO YOU CONSTRUCT TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES	20	21	21	26	16	15	6	
L 698	L1-04 DO YOU CONSTRUCT TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS	20	21	20	25	14	15	6	
L 699	L1-05 DO YOU CONSTRUCT TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS OR GATES	20	20	20	25	14	15	6	
L 700	L1-06 DO YOU USE OR REFER TO TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES	35	34	34	40	43	33	27	
L 701	K1-07 DO YOU USE OR REFER TO TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES	35	34	34	40	42	33	27	
L 702	K1-08 DO YOU USE OR REFER TO TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS	35	33	33	39	42	33	27	
L 703	L1-09 DO YOU USE OR REFER TO TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS	30	33	32	35	39	30	27	
L 704	L1-10 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR AND GATES	39	42	41	46	47	38	27	
L 705	L1-11 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR OR GATES	40	42	41	48	46	38	27	
L 706	L1-12 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR NAND OR NOR GATES	40	42	41	48	47	38	27	
L 707	L1-13 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR EXCLUSIVE OR GATES	36	40	39	42	44	36	27	
L 708	L2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO BOOLEAN EQUATIONS, LOGIC DIAGRAMS, OR LOGIC	25	25	25	32	34	23	9	
L 709	L2-02 DO YOU DRAW LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUITS	10	9	9	11	9	11	3	BOOLEAN EQUATIONS
L 710	L2-03 DO YOU CONSTRUCT TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS	7	6	6	7	5	7	0	
L 711	L2-04 DO YOU DRAW LOGIC DIAGRAMS FROM GIVEN BOOLEAN EQUATIONS	10	9	9	7	6	7	0	
L 712	L2-05 DO YOU MEASURE INPUTS OR OUTPUTS OF LOGIC GATES	22	26	25	30	30	23	6	
L 713	L2-06 DO YOU DEVELOP OR ANALYZE BOOLEAN EQUATIONS IN THE PROCESS OF TROUBLESHOOTING DIGITAL CIRCUITS	12	10	10	11	9	10	0	
L 714	L2-07 DO YOU ANALYZE LOGIC CIRCUITS BY USING BOOLEAN ALGEBRA	12	13	12	10	11	10	0	
L 715	L2-08 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUIT GATES	21	18	19	18	29	25	12	
L 716	L2-09 DO YOU USE OR REFER TO TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS	16	9	11	8	16	11	6	
L 717	L2-10 DO YOU USE OR REFER TO LOGIC DIAGRAMS CONSISTING OF MORE THAN ONE GATE	25	26	26	27	36	25	12	
L 718	L2-11 DO YOU COMPUTE SUM AND CARRY EXPRESSIONS FOR SERIAL HALF OR FULL ADDER LOGIC DIAGRAMS	10	6	7	7	6	7	3	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
L 719	L2-12 DO YOU TRACE DATA FLOW THROUGH PARALLEL FULL ADDER LOGIC DIAGRAMS	15	12	12	13	19	10	6	
L 720	L2-13 DO YOU WORK WITH ASTABLE (FREE RUNNING) MULTIVIBRATORS	25	28	27	33	37	23	12	
L 721	L2-14 DO YOU WORK WITH BISTABLE (FLIP-FLOP) MULTIVIBRATORS	26	29	28	34	37	21	15	
L 722	L2-15 DO YOU WORK WITH MONOSTABLE (ONE-SHOT) MULTIVIBRATORS	26	28	28	34	37	21	15	
L 723	L2-16 DO YOU USE OR REFER TO FLIP-FLOP MULTIVIBRATOR SYMBOLS	26	28	28	33	35	23	12	
L 724	L2-17 DO YOU USE OR REFER TO SINGLE-SHOT MULTIVIBRATOR SYMBOLS	26	28	28	32	36	23	12	
L 725	L2-18 DO YOU USE OR REFER TO FLIP-FLOP CIRCUIT DIAGRAMS	25	29	28	32	36	23	12	
L 726	L2-19 DO YOU USE OR REFER TO FLIP-FLOP TRUTH TABLES	23	26	25	27	30	18	6	
L 727	L2-20 DO YOU USE OR REFER TO COMPLEMENTED FLIP-FLOP LOGIC SYMBOLS	20	23	22	24	24	15	9	
L 728	L2-21 DO YOU USE OR REFER TO COMPLEMENTING FLIP-FLOP LOGIC SYMBOLS	20	23	22	24	24	15	9	
L 729	L2-22 DO YOU MEASURE OUTPUT WAVESHAPES OF LOGIC CIRCUITS	26	28	28	33	35	21	12	
L 730	L2-23 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTED FLIP-FLOP SCHEMATIC DIAGRAMS	22	25	24	22	28	20	9	
L 731	L2-24 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTING FLIP-FLOP SCHEMATIC DIAGRAMS	21	25	24	24	28	20	9	
L 732	L2-25 DO YOU CONSTRUCT TRUTH TABLES FOR J-K FLIP-FLOP LOGIC SYMBOLS	14	14	14	15	14	7	3	
L 733	L3-01 DO YOU WORK WITH DIGITAL COUNTERS IN YOUR PRESENT JOB	47	56	54	62	52	46	39	
L 734	L3-02 DO YOU USE OR REFER TO UP-COUNTERS	28	31	30	33	32	23	18	
L 735	L3-03 DO YOU USE OR REFER TO DOWN-COUNTERS	27	27	27	30	28	20	18	
L 736	L3-04 DO YOU USE OR REFER TO SERIAL COUNTERS	15	23	21	27	20	20	9	COUNTERS
L 737	L3-05 DO YOU USE OR REFER TO PARALLEL COUNTERS	15	22	20	23	19	18	9	
L 738	L3-06 DO YOU USE OR REFER TO RING COUNTERS	15	17	17	28	23	20	12	
L 739	L3-07 DO YOU USE OR REFER TO DECADE COUNTERS	36	45	42	52	51	48	33	
L 740	L3-08 DO YOU USE OR REFER TO COUNT DETECT CIRCUITS	18	24	23	33	27	28	12	
L 741	L3-09 DO YOU USE OR REFER TO DOWN CLOCKS	22	27	25	26	24	18	9	
L 742	L3-10 DO YOU USE OR REFER TO UP CLOCKS	22	26	25	29	24	18	9	
L 743	L3-11 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	21	24	23	24	25	18	18	
L 744	L3-12 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-	15	19	18	22	20	15	15	
L 745	L3-13 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF DECADE COUNTERS	29	38	35	42	47	39	29	
L 746	L3-14 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF RING COUNTERS	14	15	15	23	21	18	15	
L 747	L3-15 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER	12	19	17	22	16	16	9	
L 748	L3-16 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	14	20	18	24	23	20	9	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
L	749	L3-17 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF COUNTERS	21	22	22	24	25	21	18	
L	750	L3-18 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	11	18	16	21	18	11	12	
L	751	L3-19 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENT-	11	14	13	16	15	11	9	
L	752	L3-20 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE	9	13	12	16	13	11	9	
L	753	L3-21 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR OTHER TYPES OF COUNTERS	15	15	15	22	19	16	12	
L	754	L3-22 DO YOU CONSTRUCT TRUTH TABLES FROM LOGIC DIAGRAMS OF DECADE COUNTERS	10	13	12	16	10	11	9	
L	755	L3-23 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP IN RING COUNTERS FOR SPECIFIC INPUT PULSES	12	14	14	18	15	15	15	
L	756	L3-24 DO YOU DETERMINE THE APPROPRIATE AND GATE NECESSARY IN COUNT DETECT CIRCUITS TO INDICATE A REQUIRED COUNT	21	22	22	24	24	18	15	
M	757	M1-01 DO YOU WORK WITH SAWTOOTH WAVE GENERATORS	59	68	66	75	67	52	55	
M	758	M1-02 DO YOU WORK WITH TRAPEZOIDAL WAVE GENERATORS	25	28	27	33	38	31	39	
M	759	M1-03 DO YOU WORK WITH PULSED OSCILLATORS WITH REGENERATIVE FEEDBACK	51	54	53	65	51	38	42	
M	760	M1-04 DO YOU WORK WITH PULSED OSCILLATORS WITHOUT REGENERATIVE FEEDBACK	43	51	49	62	48	38	33	TIMING CIRCUITS
M	761	M1-05 DO YOU WORK WITH BLOCKING OSCILLATORS	51	50	50	63	61	51	42	
M	762	M1-06 DO YOU USE OR REFER TO RISE TIME	72	78	77	82	82	80	88	
M	763	M1-07 DO YOU USE OR REFER TO FALL OR FLYBACK TIME	63	73	70	75	78	70	85	
M	764	M1-08 DO YOU USE OR REFER TO SWEEP TIME	70	79	76	78	80	79	88	
M	765	M1-09 DO YOU USE OR REFER TO ELECTRICAL LENGTH OF SAWTOOTH WAVEFORMS	46	59	55	66	71	67	76	
M	766	M1-10 DO YOU USE OR REFER TO PHYSICAL LENGTH OF SAWTOOTH WAVEFORMS	46	56	53	56	55	52	41	
M	767	M1-11 DO YOU USE OR REFER TO LINEAR SLOPE OF SAWTOOTH WAVEFORMS	54	60	59	63	72	69	73	
M	768	M1-12 DO YOU USE OR REFER TO GATE LENGTH OF SAWTOOTH WAVEFORMS	45	57	53	58	66	64	70	
M	769	M2-01 DO YOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB	80	83	83	85	73	61	61	
M	770	M2-02 DO YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL GENERATORS	78	78	78	81	70	57	58	
M	771	M2-03 DO YOU PERFORM PERIODIC MAINTENANCE SUCH AS ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL	66	72	70	73	65	49	48	USE OF SIGNAL GENERATORS
M	772	M2-04 DO YOU TROUBLESHOOT TO AN ASSEMBLY OR SUBASSEMBLY WHILE USING SIGNAL GENERATORS	63	69	67	73	60	44	52	
M	773	M2-05 DO YOU TROUBLESHOOT TO THE SMALLEST REPLACEABLE COMPONENT WHILE USING SIGNAL GENERATORS	63	69	67	71	60	44	52	
M	774	M2-06 DO YOU USE AUDIO SINE-WAVE GENERATORS	84	83	83	86	72	59	58	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
M 775	M2-07 DO YOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH AS SQUARE WAVE, TRIANGLE, PULSE, OR SPIKE	72	77	76	84	69	59	55	
M 776	M2-08 DO YOU USE RF GENERATORS LESS THAN 1,000 MH	77	77	77	82	66	57	61	
M 777	M2-09 DO YOU USE RF GENERATORS GREATER THAN 1,000 MH	63	65	65	76	58	54	48	
M 778	M2-10 DO YOU USE OTHER SPECIAL PURPOSE OR MULTI-FUNCTION GENERATORS	62	69	67	78	68	57	58	
M 779	M3-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS OR	32	38	36	34	45	34	27	
M 780	M3-02 DO YOU INSPECT MOTORS	29	37	35	33	42	33	27	
M 781	M3-03 DO YOU CLEAN OR LUBRICATE MOTORS	29	35	34	32	39	33	30	
M 782	M3-04 DO YOU OPERATE MOTORS	28	35	33	32	41	33	21	MOTORS AND GENERATORS
M 783	M3-05 DO YOU REMOVE OR REPLACE COMPLETE MOTORS	29	36	34	34	40	33	27	
M 784	M3-06 DO YOU REMOVE OR REPLACE MOTOR PARTS	18	20	20	20	23	15	21	
M 785	M3-07 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF MOTORS	28	36	34	33	41	30	27	
M 786	M3-08 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS	15	14	14	14	19	11	18	
M 787	M3-09 DO YOU PERFORM ANY TASKS ON FIELD COILS	11	9	9	11	14	7	15	
M 788	M3-10 DO YOU PERFORM ANY TASKS ON ARMATURES	12	10	11	14	16	8	15	
M 789	M3-11 DO YOU PERFORM ANY TASKS ON ROTORS	13	10	11	12	16	10	15	
M 790	M3-12 DO YOU PERFORM ANY TASKS ON BRUSHES	17	18	18	20	29	21	24	
M 791	M3-13 DO YOU PERFORM ANY TASKS ON SLIP RINGS	11	11	11	12	17	13	15	
M 792	M3-14 DO YOU PERFORM ANY TASKS ON COMMUTATORS	11	11	11	12	18	15	12	
M 793	M3-15 DO YOU PERFORM ANY TASKS ON POLE PIECES	10	9	9	10	10	10	6	
M 794	M3-16 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OF THE FORCE OR TORQUE CREATED BY A MOTOR	5	4	4	5	5	7	3	
M 795	M3-17 DO YOU DETERMINE OR MEASURE THE DIRECTION OF THE MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR	8	6	6	7	10	8	6	
M 796	M3-18 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OR DIRECTION OF THE INDUCED VOLTAGE IN MOTORS	4	6	5	4	5	3	3	
M 797	M3-19 DO YOU WORK WITH SYNCHRONOUS MOTORS	22	23	22	25	37	31	21	
M 798	M3-20 DO YOU WORK WITH INDUCTION MOTORS	21	18	18	22	36	33	21	
M 799	M3-21 DO YOU WORK WITH SPLIT-PHASE MOTORS	13	12	12	15	28	20	9	
M 800	M3-22 DO YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS	16	19	18	25	33	23	12	
M 801	M3-23 DO YOU INSPECT GENERATORS	18	24	22	23	32	28	18	
M 802	M3-24 DO YOU CLEAN OR LUBRICATE GENERATORS	15	22	20	22	23	25	18	
M 803	M3-25 DO YOU OPERATE GENERATORS	20	26	24	25	28	24	15	
M 804	M3-26 DO YOU REMOVE OR REPLACE COMPLETE GENERATORS	12	19	17	20	24	21	15	
M 805	M3-27 DO YOU REMOVE OR REPLACE GENERATOR PARTS	12	13	13	14	15	11	15	
M 806	M3-28 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF GENERATORS	15	21	19	23	26	21	18	
M 807	M3-29 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF GENERATORS	12	13	13	12	14	11	18	
M 808	M1-01 DO YOU WORK WITH METERS IN YOUR PRESENT JOB	83	78	79	76	72	52	52	
M 809	M1-02 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF PERMANENT MAGNETS	52	42	44	47	49	33	36	
M 810	M1-03 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF MOVING COILS	54	45	47	47	51	30	33	METER MOVEMENTS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
N 811	N1-04 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF SPIRAL SPRINGS	52	3	45	46	49	30	33	
N 812	N1-05 DO YOU READ METER SCALES	84	78	79	77	72	54	55	
N 813	N1-06 DO YOU EXTEND THE RANGE OF AMMETERS	62	49	52	48	45	34	33	
N 814	N1-07 DO YOU ZERO OHMMETERS	83	77	78	75	72	54	48	
N 815	N1-08 DO YOU ZERO AMMETERS	72	67	67	63	63	48	39	
N 816	N1-09 DO YOU EXTEND THE RANGE OF VOLTMETERS	71	55	59	54	49	39	36	
N 817	N1-10 DO YOU USE OR REFER TO VOLTMETER SENSITIVITY (EXPRESSED IN UNITS OF OHMS PER VOLT)	77	68	70	67	64	56	45	
N 818	N2-01 DO YOU WORK WITH SATURABLE REACTORS OR MAGNETIC AMPLIFIERS IN YOUR PRESENT JOB	5	5	5	5	12	10	3	
N 819	N2-02 DO YOU INSPECT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	5	4	5	5	10	10	3	SATURABLE REACTORS AND MAGNETIC AMPLIFIERS
N 820	N2-03 DO YOU CLEAN MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	4	4	4	4	7	7	0	
N 821	N2-04 DO YOU ADJUST MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	4	3	3	3	9	8	0	
N 822	N2-05 DO YOU TROUBLESHOOT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	4	5	5	4	11	8	3	
N 823	N2-06 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	4	5	5	4	9	10	3	
N 824	N2-07 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIER OR SATURABLE REACTOR COMPONENTS	4	4	4	3	7	7	0	
N 825	N2-08 DO YOU USE OR REFER TO HYSTERESIS CURVES OR LOOPS	4	1	2	2	4	7	3	
N 826	N2-09 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF	5	3	4	3	7	8	3	
N 827	N2-10 DO YOU MEASURE OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE	4	4	4	5	10	8	3	
N 828	N2-11 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS FOR MAGNETIC AMPLIFIERS	4	4	4	3	7	3	3	
N 829	N2-12 DO YOU USE OR REFER TO COERCIVE FORCE IN SATURABLE REACTORS	5	1	2	1	2	5	3	
N 830	N2-13 DO YOU USE OR REFER TO RESIDUAL MAGNETISM IN SATURABLE REACTORS	5	1	2	1	3	7	3	
N 831	N2-14 DO YOU USE OR REFER TO FLUX DENSITY IN SATURABLE REACTORS	5	1	2	1	2	5	3	
N 832	N2-15 DO YOU USE OR REFER TO POINT OF SATURATION IN SATURABLE REACTORS	5	1	2	1	6	7	3	
N 833	N2-16 DO YOU USE OR REFER TO SATURABLE REACTOR SCHEMATIC SYMBOLS	5	4	4	3	10	8	3	
N 834	N3-01 DO YOU WORK WITH WAVESHAPING CIRCUITS IN YOUR PRESENT JOB	51	62	59	70	66	51	55	
N 835	N3-02 DO YOU USE OR REFER TO TRANSIENT INTERVALS	36	35	35	36	43	31	27	
N 836	N3-03 DO YOU USE OR REFER TO PULSE WIDTH (PW)	50	60	57	69	65	51	55	
N 837	N3-04 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)	47	55	53	67	61	46	48	WAVESHAPING CIRCUITS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
N	838	N3-05 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)	47	58	55	69	62	51	52	
N	839	N3-06 DO YOU USE OR REFER TO DIFFERENTIATING CIRCUITS	43	53	50	62	61	48	48	
N	840	N3-07 DO YOU USE OR REFER TO INTEGRATING CIRCUITS	45	54	51	62	60	48	42	
N	841	N3-08 DO YOU USE OR REFER TO THE CLASSIFICATION OF TIME CONSTANTS (TC) AS LONG, MEDIUM, OR SHORT	35	45	42	52	52	33	42	
N	842	N3-09 DO YOU DETERMINE WHETHER AN LR OR RC CIRCUIT IS DIFFERENTIATING OR INTEGRATING BASED ON THE TIME CONSTANT	28	34	32	31	47	30	29	
N	843	N3-10 DO YOU WORK WITH SQUARE WAVE GENERATORS	50	59	57	69	63	49	45	
N	844	N3-11 DO YOU WORK WITH RECTANGULAR WAVE GENERATORS	45	54	52	62	59	44	45	
O	845	01-01 DO YOU WORK ON SINGLE SIDEBAND SYSTEMS IN YOUR PRESENT JOB	4	4	4	8	7	2	0	
O	846	01-02 DO YOU INSPECT SSB TRANSMIT OR RECEIVE SYSTEMS	4	3	3	7	5	2	0	
O	847	01-03 DO YOU CLEAN SSB TRANSMIT OR RECEIVE SYSTEMS	4	3	3	7	5	2	0	
O	848	01-04 DO YOU ALIGN SSB TRANSMIT OR RECEIVE SYSTEMS	3	3	3	8	6	2	0	SINGLE SIDEBAND SYSTEMS
O	849	01-05 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE SYSTEMS	3	3	3	7	5	2	0	
O	850	01-06 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE COMPONENTS	3	3	3	8	6	2	0	
O	851	01-07 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE SYSTEMS	3	3	3	6	5	2	0	
O	852	01-08 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE COMPONENTS	3	3	3	7	6	2	0	
O	853	01-09 DO YOU PERFORM TASKS ON SSB AUDIO AMPLIFIERS	4	3	3	8	6	2	0	
O	854	01-10 DO YOU PERFORM TASKS ON SSB BALANCED MODULATORS	4	2	3	7	7	2	0	
O	855	01-11 DO YOU PERFORM TASKS ON SSB CARRIER OSCILLATORS	7	3	4	8	6	2	0	
O	856	01-12 DO YOU PERFORM TASKS ON SSB LC FILTERS	5	3	4	8	6	2	0	
O	857	01-13 DO YOU PERFORM TASKS ON SSB CRYSTAL FILTERS	5	3	3	8	6	2	0	
O	858	01-14 DO YOU PERFORM TASKS ON SSB MECHANICAL FILTERS	5	2	3	5	5	2	0	
O	859	01-15 DO YOU PERFORM TASKS ON SSB OSCILLATORS	7	4	4	8	6	2	0	
O	860	01-16 DO YOU PERFORM TASKS ON SSB MIXERS	5	3	4	8	7	2	0	
O	861	01-17 DO YOU PERFORM TASKS ON SSB DRIVERS	5	3	4	8	6	2	0	
O	862	01-18 DO YOU PERFORM TASKS ON SSB POWER AMPLIFIERS	4	3	3	8	6	2	0	
O	863	01-19 DO YOU PERFORM TASKS ON SSB RF AMPLIFIERS	5	3	3	8	6	2	0	
O	864	01-20 DO YOU PERFORM TASKS ON SSB FREQUENCY CONVERTERS	5	3	4	8	6	2	0	
O	865	01-21 DO YOU PERFORM TASKS ON SSB IF AMPLIFIERS	4	3	3	8	6	2	0	
O	866	01-22 DO YOU PERFORM TASKS ON SSB DEMODULATORS	5	3	4	8	6	2	0	
O	867	01-23 DO YOU PERFORM TASKS ON SSB DON'T REMEMBER WHICH SSB SYSTEM STAGES	1	1	1	1	2	0	0	
O	868	01-24 DO YOU USE OR REFER TO SELECTIVE FADING	2	2	2	2	3	2	0	
O	869	01-25 DO YOU USE OR REFER TO PEAK POWER	5	3	4	8	6	2	0	
O	870	01-26 DO YOU USE OR REFER TO FREQUENCY STABILITY	3	3	3	8	6	2	0	
O	871	01-27 DO YOU USE OR REFER TO RESPONSE CURVES FOR BANDWIDTH FILTERS	4	3	3	7	5	2	0	
O	872	01-28 DO YOU CALCULATE PEAK POWER OR EFFECTIVE POWER OF SSB TRANSMITTERS	4	1	2	5	5	2	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
0 873	01-29 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB TRANSMITTER SCHEMATIC DIAGRAMS	5	2	3	8	6	2	0
0 874	01-30 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB RECEIVER SCHEMATIC DIAGRAMS	4	3	3	7	6	2	0
0 875	02-01 DO YOU WORK ON PULSE MODULATION SYSYEMS IN YOUR PRESENT JOB	24	33	30	43	38	30	21
0 876	02-02 DO YOU INSPECT PULSE MODULATION SYSTEMS	25	32	30	42	36	28	24
0 877	02-03 DO YOU CLEAN PULSE MODULATION SYSTEMS	22	28	26	33	27	15	15
0 878	02-04 DO YOU ALIGN PULSE MODULATION SYSTEMS	23	32	30	39	36	20	18
0 879	02-05 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS	24	32	30	41	36	21	21
0 880	02-06 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEM COMPONENTS	23	32	29	42	35	23	21
0 881	02-07 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS	21	28	26	33	29	15	15
0 882	02-08 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEM COMPONENTS	24	31	29	41	34	20	15
0 883	02-09 DO YOU WORK ON PULSE-AMPLITUDE MODULATION (PAM) SYSTEMS	20	27	25	37	34	21	21
0 884	02-10 DO YOU WORK ON PULSE-DURATION MODULATION (PDM) SYSTEMS	15	21	19	31	26	21	6
0 885	02-11 DO YOU WORK ON PULSE-POSITION MODULATION (PPM) SYSTEMS	18	22	21	32	26	10	12
0 886	02-12 DO YOU WORK ON PULSE-CODE MODULATION (PCM) SYSTEMS	14	18	17	29	27	10	15
0 887	02-13 DO YOU WORK ON LINE PULSING MODULATION SYSTEMS	11	12	11	18	14	2	6
0 888	02-14 DO YOU WORK ON DON'T REMEMBER WHICH TYPE OF MODULATION SYSTEM	5	8	7	7	8	2	3
0 889	02-15 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER SUPPLIES	22	28	26	36	36	20	15
0 890	02-16 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM CHARGING CHOKES AND CHARGING DIODES	12	18	16	26	24	8	15
0 891	02-17 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE FORMING NETWORKS	22	29	27	39	35	21	15
0 892	02-18 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TIMERS	20	24	23	31	35	18	15
0 893	02-19 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM SWITCHES SUCH AS GAS THYRATRONS	12	19	17	26	30	21	15
0 894	02-20 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE TRANSFORMERS	14	22	20	31	34	20	18
0 895	02-21 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TRANSMITTER TUBES	17	23	22	31	28	16	12
0 896	02-22 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM RF AMPLIFIERS	23	31	28	38	37	21	18
0 897	02-23 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM FREQUENCY CONVERTERS	23	30	28	37	36	20	18
0 898	02-24 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM IF AMPLIFIERS	22	31	28	35	36	21	18
0 899	02-25 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DETECTORS	23	30	28	39	37	21	18

PULSE MODULATION SYSTEMS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
0 900	02-26 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM VIDEO AMPLIFIERS	21	29	27	35	37	21	18	
0 901	02-27 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER VIDEO AMPLIFIERS	16	23	21	27	28	18	15	
0 902	02-28 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DON'T REMEMBER WHICH PULSE MODULATION SYSTEM STAGES	3	4	4	7	7	2	3	
0 903	02-29 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)	25	32	30	42	39	28	24	
0 904	02-30 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)	25	29	28	42	36	25	24	
0 905	02-31 DO YOU USE OR REFER TO PULSE WIDTH (PW)	25	33	31	44	39	28	24	
0 906	02-32 DO YOU USE OR REFER TO PULSE SHAPE	25	33	31	42	39	28	24	
0 907	02-33 DO YOU USE OR REFER TO PEAK POWER	22	30	28	39	38	25	24	
0 908	02-34 DO YOU USE OR REFER TO AVERAGE POWER	22	28	26	38	36	21	24	
0 909	02-35 DO YOU CALCULATE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)	18	26	24	32	31	20	12	
0 910	02-36 DO YOU MEASURE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)	22	31	28	41	38	30	18	
0 911	02-37 DO YOU USE FORMULAS TO CALCULATE AVERAGE POWER OR PEAK POWER OF PULSE MODULATION TRANSMIT SYSTEMS	15	22	20	31	32	16	9	
0 912	02-38 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION TRANSMITTER SCHEMATIC DIAGRAMS	22	28	26	37	35	15	18	
0 913	02-39 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION RECEIVER SCHEMATIC DIAGRAMS	18	26	24	35	28	18	15	
0 914	03-01 DO YOU WORK WITH ANTENNAS IN YOUR PRESENT JOB	9	7	7	8	10	3	6	
0 915	03-02 DO YOU INSPECT ANTENNAS	10	6	7	8	9	2	6	
0 916	03-03 DO YOU CLEAN ANTENNAS	7	5	5	6	7	2	6	
0 917	03-04 DO YOU PHYSICALLY ALIGN ANTENNAS	4	4	4	4	6	2	3	
0 918	03-05 DO YOU ELECTRICALLY ALIGN ANTENNAS	5	4	4	5	6	2	3	ANTENNAS
0 919	03-06 DO YOU TROUBLESHOOT TO ANTENNAS	7	5	6	7	7	2	6	
0 920	03-07 DO YOU TROUBLESHOOT TO ANTENNA COMPONENTS	2	4	3	5	6	2	6	
0 921	03-08 DO YOU REMOVE OR INSTALL ANTENNAS	5	4	5	7	7	2	6	
0 922	03-09 DO YOU REMOVE OR REPLACE COMPONENTS OF ANTENNAS	3	4	4	5	6	2	6	
0 923	03-10 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF E OR ELECTRIC FIELD LINES	5	1	2	3	5	0	6	
0 924	03-11 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF H OR MAGNETIC FIELD LINES	4	1	2	2	6	0	6	
0 925	03-12 DO YOU DETERMINE THE DIRECTION OF THE MAGNETIC LINES IN RELATION TO THE ELECTRIC LINES OF FORCE FOR ANTENNAS	4	1	2	2	4	0	6	
0 926	03-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE OF CORRECT LENGTH (HALF-WAVE) ACT AS	5	3	3	2	3	0	3	
0 927	03-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE LONGER THAN A HALF-WAVE ACT AS INDUCTIVE LOADS	5	3	3	2	3	0	3	
0 928	03-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE SHORTER THAN A HALF-WAVE ACT AS CAPACITIVE LOADS	4	2	3	3	3	0	3	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
O	929	03-16 DO YOU WORK WITH HERTZ ANTENNAS	7	2	3	3	4	0	3	
O	930	03-17 DO YOU WORK WITH MARCONI ANTENNAS	5	1	2	2	3	0	0	
O	931	03-18 DO YOU WORK WITH BROADSIDE ARRAYS	1	0	1	2	5	0	3	
O	932	03-19 DO YOU WORK WITH END-FIRE ARRAYS	1	1	1	2	3	0	3	
O	933	03-20 DO YOU WORK WITH CARDIOID ARRAYS	1	1	1	1	3	0	0	
O	934	03-21 DO YOU WORK WITH COLLINEAR ARRAYS	2	0	1	1	2	0	0	
O	935	03-22 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC INDUCTION FIELDS WHEN WORKING WITH ANTENNAS	4	1	2	2	4	0	0	
O	936	03-23 DO YOU MEASURE ELECTROMAGNETIC INDUCTION FIELDS OF ANTENNAS	3	1	2	1	3	0	0	
O	937	03-24 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC RADIATION FIELDS WHEN WORKING WITH ANTENNAS	4	2	2	2	3	0	3	
O	938	03-25 DO YOU MEASURE ELECTROMAGNETIC RADIATION FIELDS OF ANTENNAS	2	1	1	1	3	0	3	
O	939	03-26 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA RADIATION	2	1	1	1	2	0	0	
O	940	03-27 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA INDUCTION FIELD	2	1	1	1	2	0	0	
O	941	03-28 ARE ANY OF THE ANTENNAS YOU WORK ON LINEARLY POLARIZED	3	1	2	1	4	0	0	
O	942	03-29 ARE ANY OF THE ANTENNAS YOU WORK ON CIRCULARLY POLARIZED	4	1	2	1	3	0	0	
O	943	03-30 DO YOU MEASURE OR DETERMINE THE POLARITY OF ANTENNAS YOU WORK ON	3	1	2	1	3	0	0	
O	944	03-31 DO YOU CONSTRUCT, OR MAKE THE CALCULATIONS NECESSARY TO CONSTRUCT, ANTENNAS OF CORRECT LENGTH FOR	3	1	2	3	3	0	6	
O	945	03-32 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS	2	0	1	1	3	0	0	
O	946	03-33 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS DIRECTORS	2	0	1	1	3	0	0	
O	947	03-34 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS REFLECTORS	2	0	1	1	3	0	0	
O	948	03-35 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN DON'T REMEMBER WHAT KIND OF ELEMENTS	2	1	2	3	2	0	3	
O	949	03-36 DO YOU WORK ON UNIDIRECTIONAL ANTENNAS	7	3	4	5	5	0	6	
O	850	03-37 DO YOU WORK ON BIDIRECTIONAL ANTENNAS	4	3	3	3	5	0	3	
O	851	03-38 DO YOU WORK ON DON'T REMEMBER THE DIRECTIONALITY	2	1	1	2	3	0	0	
O	852	03-39 DO YOU WORK WITH ROTAR ANTENNA ARRAYS	3	1	1	3	3	0	0	
P	953	P1-01 IN YOUR PRESENT JOB DO YOU WORK WITH TRANSMISSION LINES (TRANSMISSION LINES ARE DEFINED TO INCLUDE LEADS	10	13	12	22	22	13	12	
P	954	P1-02 DO YOU REFER TO OR USE COPPER LOSS OR I2R LOSS IN TRANSMISSION LINES	4	5	5	9	13	3	3	TRANSMISSION LINES
P	955	P1-03 DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY CURRENTS IN TRANSMISSION LINES	7	6	6	11	16	5	6	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
P 956	P1-04 DO YOU REFER TO OR USE RADIATION LOSS IN TRANSMISSION LINES	8	8	8	12	19	5	6
P 957	P1-05 DO YOU USE OR REFER TO DIELECTRIC LOSS IN TRANSMISSION LINES	7	5	6	10	14	7	6
P 958	P1-06 DO YOU USE OR REFER TO LEAKAGE LOSSES IN TRANSMISSION LINES	9	9	9	10	15	8	6
P 959	P1-07 DO YOU WORK WITH TWISTED PAIR TRANSMISSION LINES	5	7	7	10	14	8	9
P 960	P1-08 DO YOU WORK WITH TWIN LEAD TRANSMISSION LINES	5	9	8	12	13	8	12
P 961	P1-09 DO YOU WORK WITH OPEN TWO-WIRE TRANSMISSION LINES	4	7	6	10	11	7	12
P 962	P1-10 DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION LINES	12	14	13	21	22	11	12
P 963	P1-11 DO YOU WORK WITH RIGID COAXIAL CABLE TRANSMISSION LINES	12	11	11	16	19	10	12
P 964	P1-12 DO YOU TROUBLESHOOT TRANSMISSION LINES	7	9	8	14	19	8	6
P 965	P1-13 DO YOU ANALYZE VOLTAGE OR CURRENT WAVEFORMS IN TRANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION	5	5	5	11	9	8	6
P 966	P1-14 DO YOU SELECT APPROPRIATE TRANSMISSION LINES TERMINATIONS TO ACHIEVE DESIRED WAVEFORMS	9	11	10	16	21	11	9
P 967	P1-15 DO YOU USE OR REFER TO SCHEMATIC SYMBOLS FOR LINE TERMINATIONS IN TERMS OF CIRCUIT TERMINATIONS	10	11	10	16	18	11	12
P 968	P1-16 DO YOU MEASURE STANDING WAVE RATIOS (SR) OF TRANSMISSION LINES	5	11	10	18	20	11	6
P 969	P1-17 DO YOU CALCULATE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES	5	10	9	14	16	11	6
P 970	P1-18 DO YOU PERFORM THE CALCULATIONS NECESSARY TO DETERMINE THE IMPEDANCE AND LENGTH OF QUARTER - WAVELENGTH	4	6	5	7	10	8	9
P 971	P1-19 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING MATCHING TRANSFORMERS	7	8	7	14	14	11	6
P 972	P1-20 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING DELTA MATCHING	4	6	5	6	6	2	3
P 973	P1-21 DO YOU SELECT THE TYPE OF TRANSMISSION LINE NEEDED FOR PARTICULAR JOBS WITHOUT REFERRING TO TECHNICAL DATA	4	5	5	11	9	5	6
P 974	P1-22 DO YOU USE OR REFER TO THE TERM CHARACTERISTIC IMPEDANCE (ZO) OF TRANSMISSION LINES	8	10	9	18	21	10	12
P 975	P1-23 DO YOU CALCULATE THE CHARACTERISTIC IMPEDANCE (ZO) OF TRANSMISSION LINES	4	5	5	8	9	3	3
P 976	P1-24 DO YOU USE OR REFER TO THE TERM CUTOFF FREQUENCY OF TRANSMISSION LINES	7	10	9	15	20	13	6
P 977	P1-25 DO YOU USE OR REFER TO THE TERM VELOCITY FACTOR (K) OF TRANSMISSION LINES	5	5	5	7	7	7	3
P 978	P1-26 DO YOU COMPUTE THE ELECTRICAL LENGTH OF TRANSMISSION LINES FOR PARTICULAR FREQUENCIES	4	7	6	8	10	10	3
P 979	P1-27 DO YOU CONSTRUCT TRANSMISSION LINES OF PARTICULAR ELECTRICAL LENGTH FOR GIVEN FREQUENCIES	4	6	5	8	9	5	3
P 980	P1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT AS THE FREQUENCY INCREASES AND THE PHYSICAL LENGTH OF	5	6	6	7	11	7	6

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
P 981	P1-29 DO YOU WORK WITH NONRESONANT (FLAT) TRANSMISSION LINES	7	9	9	16	18	11	12	
P 982	P1-30 DO YOU WORK WITH RESONANT TRANSMISSION LINES	7	10	9	12	16	7	12	
P 983	P1-31 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING STUB MATCHING	8	10	9	17	19	11	9	
P 984	P2-01 DO YOU WORK WITH WAVEGUIDES OR CAVITY RESONATORS IN YOUR PRESENT JOB	20	31	28	42	41	38	27	
P 985	P2-02 DO YOU INSPECT WAVEGUIDES OR CAVITY RESONATORS	20	31	28	42	42	41	30	
P 986	P2-03 DO YOU CLEAN WAVEGUIDES OR CAVITY RESONATORS	15	27	24	34	31	28	27	WAVEGUIDES AND CAVITY RESONATORS
P 987	P2-04 DO YOU BEND WAVEGUIDES OR CAVITY RESONATORS	7	8	7	13	7	5	12	
P 988	P2-05 DO YOU TWIST WAVEGUIDES OR CAVITY RESONATORS	7	8	7	12	7	2	12	
P 989	P2-06 DO YOU PRESSURIZE WAVEGUIDES OR CAVITY RESONATORS	7	3	4	7	3	0	6	
P 990	P2-07 DO YOU PURGE WAVEGUIDES OR CAVITY RESONATORS	7	4	5	9	5	5	6	
P 991	P2-08 DO YOU TROUBLESHOOT WAVEGUIDES OR CAVITY RESONATORS	12	21	19	30	31	30	24	
P 992	P2-09 DO YOU REMOVE OR INSTALL COMPLETE WAVEGUIDES	13	28	24	31	34	28	27	
P 993	P2-10 DO YOU REMOVE OR INSTALL WAVEGUIDE SECTIONS	16	30	26	38	39	30	27	
P 994	P2-11 DO YOU REMOVE OR INSTALL DUMMY LOADS	16	29	26	39	39	30	30	
P 995	P2-12 DO YOU REMOVE OR INSTALL E BENDS	9	17	14	20	24	25	18	
P 996	P2-13 DO YOU REMOVE OR INSTALL H BENDS	10	16	14	22	24	25	18	
P 997	P2-14 DO YOU REMOVE OR INSTALL OTHER BENDS	9	20	17	25	23	20	15	
P 998	P2-15 DO YOU REMOVE OR INSTALL CHOKE JOINTS	7	11	10	12	11	8	15	
P 999	P2-16 DO YOU REMOVE OR INSTALL ROTATING JOINTS	7	10	9	12	7	0	12	
P1000	P2-17 DO YOU REMOVE OR INSTALL DIRECTIONAL COUPLERS	17	29	26	39	39	33	27	
P1001	P2-18 DO YOU REMOVE OR INSTALL BIDIRECTIONAL COUPLERS	16	24	22	33	34	26	21	
P1002	P2-19 DO YOU USE OR REFER TO "A" WALL OF WAVEGUIDES	7	9	8	14	9	10	21	
P1003	P2-20 DO YOU USE OR REFER TO "B" WALL OF WAVEGUIDES	7	10	9	14	9	10	21	
P1004	P2-21 DO YOU USE OR REFER TO CUTOFF FREQUENCY OF WAVEGUIDES	15	23	21	37	37	31	30	
P1005	P2-22 DO YOU USE OR REFER TO FREQUENCY-DETERMINING WALL OF WAVEGUIDES	9	12	11	18	11	7	15	
P1006	P2-23 DO YOU USE OR REFER TO POWER-DETERMINING WALL OF WAVEGUIDES	8	9	9	14	9	7	12	
P1007	P2-24 DO YOU USE OR REFER TO ELECTRIC FIELD BOUNDARY CONDITIONS	7	6	6	10	5	5	3	
P1008	P2-25 DO YOU USE OR REFER TO MAGNETIC FIELD BOUNDARY CONDITIONS	5	6	6	9	5	5	3	
P1009	P2-26 DO YOU USE OR REFER TO DUPLEXER FIELD BOUNDARY CONDITIONS	5	3	4	7	3	3	3	
P1010	P2-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST WAVEGUIDES ARE MADE WITH A "B" WALL SIZE OF .7 WAVELENGTHS	5	4	5	9	8	7	12	
P1011	P2-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST "A" WALLS RANGE FROM .2 TO .5 WAVELENGTHS IN SIZE, WITH .35	5	4	5	10	6	7	9	
P1012	P2-29 ARE YOU CONCERNED WITH THE MATERIAL (SUCH AS BRASS) WHICH WAVEGUIDES ARE MADE OF	5	4	5	10	3	8	3	
P1013	P2-30 DO YOU COMPUTE THE LENGTH OF A WAVEGUIDE FOR SPECIFIC INSTALLATION	7	4	5	8	7	0	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK		SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
P1014	P2-31 DO YOU USE THE RIGHT HAND RULE TO DETERMINE THE DIRECTION OF PROPAGATION, DIRECTION OF "E" FIELD, OR	5	5	5	7	5	8	3	
P1015	P2-32 DO YOU USE OR REFER TO THE TIME PHASE OF PEAK "E" OR "H" LINES IN WAVEGUIDES	7	4	5	5	5	7	15	
P1016	P2-33 DO YOU MEASURE THE TIME PHASE OF "E" OR "H" LINES IN WAVEGUIDES	8	3	4	5	5	5	6	
P1017	P2-34 DO YOU USE OR REFER TO THE SPACE QUADRATURE OF "E" OR "H" LINES IN WAVEGUIDES	7	3	4	4	4	2	6	
P1018	P2-35 ARE HIGH POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	8	10	9	19	13	8	12	
P1019	P2-36 ARE LOW POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	12	17	16	27	35	28	24	
P1020	P2-37 ARE LOOPS USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	14	17	16	29	36	28	27	
P1021	P2-38 ARE APERTURES (WINDOWS OR IRISES) USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	12	9	10	25	28	26	18	
P1022	P2-39 ARE DON'T REMEMBER THE KIND OF ENERGY COUPLING USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	3	9	7	13	7	3	3	
P1023	P2-40 DO YOU DETERMINE WHERE PROBES SHOULD BE MOUNTED IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO	5	4	4	10	7	5	3	
P1024	P2-41 DO YOU DETERMINE THE POSITIONING OF LOOPS IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO	5	4	5	7	8	5	3	
P1025	P2-42 DO YOU DETERMINE THE POSITIONING OR SIZE OF APERTURES IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO	5	2	3	7	3	0	0	
P1026	P2-43 ARE CHOKE JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	5	7	7	10	12	10	15	
P1027	P2-44 ARE ROTATING JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	4	4	4	7	7	0	9	
P1028	P2-45 ARE DON'T REMEMBER THE KIND OF JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	7	13	11	20	14	7	12	
P1029	P2-46 DO YOU TUNE CAVITY RESONATORS USING CAPACITIVE TUNING	12	17	15	21	22	20	12	
P1030	P2-47 DO YOU TUNE CAVITY RESONATORS USING INDUCTIVE TUNING	12	14	14	20	18	18	12	
P1031	P2-48 DO YOU TUNE CAVITY RESONATORS USING VOLUME TUNING	11	14	13	20	20	11	12	
P1032	P2-49 DO YOU TUNE CAVITY RESONATORS USING DON'T REMEMBER THE METHOD OF TUNING	4	7	6	14	9	5	6	
P1033	P2-50 DO YOU MEASURE THE FREQUENCY OF SIGNALS IN CAVITY RESONATORS	14	24	21	32	40	30	27	
P1034	P3-01 IN YOUR PRESENT JOB DO YOU WORK WITH KLYSTRONS, TRAVELING WAVE TUBES (TWT), PARAMETRIC AMPLIFIERS, OR	22	29	28	42	44	34	24	
P1035	P3-02 DO YOU USE OR REFER TO INTERELECTRODE CAPACITANCE	13	15	15	20	18	20	12	MICROWAVE AMPLIFIERS AND OSCILLATORS
P1036	P3-03 DO YOU USE OR REFER TO ELECTRON TRANSIT TIME	12	10	11	15	16	13	9	
P1037	P3-04 DO YOU USE OR REFER TO LEAD INDUCTANCE	12	14	13	19	11	13	12	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
P1038	P3-05 DO YOU USE OR REFER TO RF LOSSES IN EXTERNAL CIRCUITRY	17	21	20	29	23	20	15
P1039	P3-06 DO YOU USE OR REFER TO PRINCIPLE OF ELECTRON VELOCITY MODULATION	16	15	15	21	24	21	15
P1040	P3-07 DO YOU USE OR REFER TO ELECTRON BUNCHING	15	16	16	24	25	23	12
P1041	P3-08 DO YOU WORK WITH TWO-CAVITY KLYSTRONS	12	15	14	19	9	10	9
P1042	P3-09 DO YOU WORK WITH THREE-CAVITY KLYSTRONS	7	10	9	13	5	2	9
P1043	P3-10 DO YOU WORK WITH REFLEX KLYSTRONS	21	27	26	40	41	34	24
P1044	P3-11 DO YOU WORK WITH TRAVELING-WAVE TUBES (TWT)	13	20	18	31	34	26	18
P1045	P3-12 DO YOU WORK WITH NONDEGENERATIVE PARAMETRIC AMPLIFIERS	3	3	3	9	5	2	6
P1046	P3-13 DO YOU WORK WITH UP-CONVERTER PARAMETRIC AMPLIFIERS	3	3	3	8	4	2	6
P1047	P3-14 DO YOU WORK WITH MAGNETRONS	5	9	8	16	12	8	15
P1048	P3-15 DO YOU INSPECT KLYSTRONS OR TWT	17	27	24	38	36	30	18
P1049	P3-16 DO YOU CLEAN KLYSTRONS OR TWT	14	21	19	24	23	15	12
P1050	P3-17 DO YOU TUNE KLYSTRONS OR TWT ELECTRICALLY	16	27	25	37	41	33	21
P1051	P3-18 DO YOU TUNE KLYSTRONS OR TWT MECHANICALLY	14	25	22	38	39	31	18
P1052	P3-19 DO YOU PERFORM OPERATIONAL CHECKS OF KLYSTRONS OR TWT	21	27	26	40	41	33	24
P1053	P3-20 DO YOU TROUBLESHOOT KLYSTRONS OR TWT	18	27	25	33	34	28	21
P1054	P3-21 DO YOU REMOVE OR REPLACE COMPLETE KLYSTRON OR TWT	20	28	26	37	36	30	21
P1055	P3-22 DO YOU REMOVE OR REPLACE KLYSTRON OR TWT COMPONENTS	12	16	15	21	15	13	18
P1056	P3-23 DO YOU INSPECT PARAMETRIC AMPLIFIERS	8	4	5	9	9	3	6
P1057	P3-24 DO YOU CLEAN PARAMETRIC AMPLIFIERS	5	4	4	8	5	2	3
P1058	P3-25 DO YOU ADJUST PARAMETRIC AMPLIFIERS	7	4	5	9	7	3	3
P1059	P3-26 DO YOU TUNE PARAMETRIC AMPLIFIERS	7	4	5	9	7	3	3
P1060	P3-27 DO YOU PERFORM OPERATIONAL CHECKS OF PARAMETRIC AMPLIFIERS	7	4	5	10	8	3	6
P1061	P3-28 DO YOU TROUBLESHOOT PARAMETRIC AMPLIFIERS	7	4	5	9	7	2	6
P1062	P3-29 DO YOU REMOVE OR REPLACE COMPLETE PARAMETRIC AMPLIFIER	5	4	4	8	6	2	6
P1063	P3-30 DO YOU REMOVE OR REPLACE PARAMETRIC AMPLIFIER COMPONENTS	4	3	3	8	7	2	6
P1064	P3-31 DO YOU INSPECT MAGNETRONS	4	6	6	16	9	3	12
P1065	P3-32 DO YOU CLEAN MAGNETRONS	3	6	5	10	5	3	9
P1066	P3-33 DO YOU ADJUST MAGNETRONS	3	6	5	14	7	3	6
P1067	P3-34 DO YOU TUNE MAGNETRONS	3	6	5	14	9	3	9
P1068	P3-35 DO YOU PERFORM OPERATIONAL CHECKS OF MAGNETRONS	3	6	6	16	9	3	15
P1069	P3-36 DO YOU TROUBLESHOOT MAGNETRONS	3	6	6	14	8	3	12
P1070	P3-37 DO YOU REMOVE OR REPLACE COMPLETE MAGNETRON	3	6	5	14	7	3	12
P1071	P3-38 DO YOU REMOVE OR REPLACE MAGNETRON COMPONENTS	3	3	3	7	4	3	12
P1072	P3-39 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS COLLECTOR PLATES	12	14	13	14	14	13	9
P1073	P3-40 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER CAVITIES	11	12	11	14	12	11	9
P1074	P3-41 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER GRIDS	12	13	13	14	13	15	9

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
P1075	P3-42 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS FEEDBACK LOOPS	14	15	15	16	13	11	9
P1076	P3-43 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS DRIFT SPACES	10	9	9	10	9	10	3
P1077	P3-44 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER GRIDS	11	11	11	14	14	16	9
P1078	P3-45 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER CAVITIES	11	12	11	12	13	13	9
P1079	P3-46 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CONTROL GRIDS	13	14	13	15	17	16	9
P1080	P3-47 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATHODES	13	14	14	14	16	16	9
P1081	P3-48 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON REPELLER (REFLECTOR) PLATES	17	25	23	36	39	31	24
P1082	P3-49 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRIDS	20	22	21	35	38	31	18
P1083	P3-50 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRID CAVITY GAPS	16	18	17	27	22	21	18
P1084	P3-51 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON RESONANT CAVITIES	18	23	22	36	34	31	21
P1085	P3-52 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON MAGNETIC COUPLING LOOPS	11	14	13	25	28	20	18
P1086	P3-53 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON FILAMENTS	18	23	22	33	37	26	18
P1087	P3-54 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON CATHODES	18	21	20	32	39	30	21
P1088	P3-55 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON OUTPUT LEADS	18	23	21	35	34	28	18
P1089	P3-56 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES FILAMENTS	15	16	16	26	29	21	15
P1090	P3-57 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES CATHODES	15	16	16	25	29	21	18
P1091	P3-58 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MODULATOR GRIDS	14	14	14	23	30	18	15
P1092	P3-59 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ANODES	15	17	17	26	30	23	18
P1093	P3-60 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES HELIXES	15	16	16	25	30	21	18
P1094	P3-61 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES COLLECTORS	14	15	15	24	29	21	15
P1095	P3-62 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MAGNETS	10	12	11	19	26	18	15
P1096	P3-63 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ATTENUATORS	14	15	14	25	26	21	15
P1097	P3-64 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE CIRCULATORS	3	1	2	8	5	2	3
P1098	P3-65 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER SIGNAL CAVITIES	5	2	3	10	7	2	9

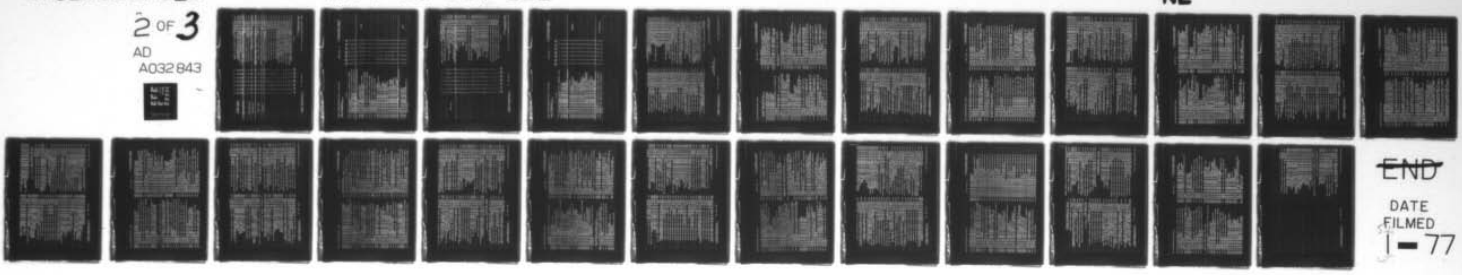
TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
P1099	P3-66 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER IDLER CAVITIES	3	1	2	7	5	2	3	
P1100	P3-67 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER VARACTOR DIODES	7	3	4	9	8	3	6	
P1101	P3-68 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE ISOLATORS	7	2	3	10	8	5	9	
P1102	P3-69 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER REVERSE-BIAS BATTERIES	4	1	2	9	3	2	3	
P1103	P3-70 DO YOU PERFORM TASKS ON ANODES	3	4	4	8	5	2	3	
P1104	P3-71 DO YOU PERFORM TASKS ON ANODE COOLING PINS	2	3	3	6	3	2	3	
P1105	P3-72 DO YOU PERFORM TASKS ON COUPLING LOOPS	3	4	4	8	6	2	6	
P1106	P3-73 DO YOU PERFORM TASKS ON HEATER LEADS	3	4	4	8	5	2	6	
P1107	P3-74 DO YOU PERFORM TASKS ON RESONANT CAVITIES	3	5	4	10	5	2	3	
P1108	P3-75 DO YOU PERFORM TASKS ON CATHODES	3	4	3	9	6	2	3	
P1109	P3-76 DO YOU PERFORM TASKS ON MAGNETS	3	3	3	8	5	2	3	
Q1110	Q1-01 DO YOU USE OR REFER TO STORAGE REGISTERS	20	15	16	23	26	25	9	
Q1111	Q1-02 DO YOU USE OR REFER TO SHIFT REGISTERS	18	16	16	22	23	25	9	
Q1112	Q1-03 DO YOU USE OR REFER TO LOGIC SYMBOLS OF SHIFT REGISTERS	17	14	15	21	22	21	12	
Q1113	Q1-04 DO YOU USE OR REFER TO LOGIC SYMBOLS OF STORAGE REGISTERS	17	14	14	20	25	21	12	REGISTERS
Q1114	Q1-05 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	18	14	15	20	22	15	9	
Q1115	Q1-06 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF REGISTERS	18	13	14	20	24	15	12	
Q1116	Q1-07 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES	15	14	14	15	18	10	6	
Q1117	Q2-01 DO YOU WORK WITH DIGITAL COUNTERS, REGISTERS, OR STORAGE DEVICES IN YOUR PRESENT JOB	26	34	32	36	36	26	21	
Q1118	Q2-02 DO YOU USE OR REFER TO DELAY LINES	23	27	26	31	32	20	18	
Q1119	Q2-03 DO YOU USE OR REFER TO MAGNETIC CORES	12	8	10	8	10	7	12	STORAGE DEVICES
Q1120	Q2-04 DO YOU USE OR REFER TO MAGNETIC DRUMS	5	3	3	5	3	5	9	
Q1121	Q2-05 DO YOU USE OR REFER TO MAGNETIC TAPES	7	4	5	6	6	5	15	
Q1122	Q2-06 DO YOU USE OR REFER TO ACCESS TIME OR SPEED OR MEMORY SYSTEMS	7	8	7	12	7	3	9	
Q1123	Q2-07 DO YOU USE OR REFER TO WORD CAPACITY OF MEMORY SYSTEMS	5	8	7	9	6	2	9	
Q1124	Q2-08 DO YOU USE OR REFER TO VOLATILITY OF MEMORY SYSTEMS	5	5	5	7	3	2	9	
Q1125	Q2-09 DO YOU USE OR REFER TO LOGIC SYMBOL OF DELAY LINES	14	12	13	14	17	10	9	
Q1126	Q3-01 IN YOUR PRESENT JOB, DO YOU WORK WITH DIGITAL-TO-ANALOG (D/A) CONVERTERS, ANALOG-TO-DIGITAL (A/D)	21	29	23	28	34	26	15	
Q1127	Q3-02 DO YOU COMPUTE OUTPUT VOLTAGES FOR ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT	9	10	10	8	11	5	0	DIGITAL TO ANALOG CONVERTERS
Q1128	Q3-03 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE COUNT IN ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A)	8	8	7	7	6	7	3	

AD-A032 843 AIR FORCE OCCUPATIONAL MEASUREMENT CENTER LACKLAND A--ETC F/G 5/9
ELECTRONICS PRINCIPLES PRECISION MEASURING EQUIPMENT CAREER LAD--ETC(U)
NOV 76

UNCLASSIFIED AFPT-90-324-222 NL

2 OF 3
AD
A032 843



END
DATE FILMED
1-77

CONT.

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
Q1129	Q3-04 DO YOU COMPUTE ANALOG VOLTAGES FOR GIVEN BINARY COUNTS IN ELECTRONIC DIGITAL-TO-ANALOG (D/A) CONVERTERS	9	13	11	10	19	10	0	
Q1130	Q3-05 DO YOU PERFORM SAMPLE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	10	15	14	16	29	15	9	
Q1131	Q3-06 DO YOU PERFORM HOLD FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	10	15	13	16	29	15	9	
Q1132	Q3-07 DO YOU PERFORM COMPARE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	9	13	12	15	21	13	9	
Q1131	Q3-08 DO YOU PERFORM DIGITIZE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	9	14	13	19	22	15	9	
Q1134	Q3-09 DO YOU PERFORM DON'T REMEMBER WHICH FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER	2	6	5	8	5	3	6	
Q1135	Q3-10 DO YOU USE OR REFER TO SAMPLE FUNCTION OF A/D CONVERTERS	11	16	14	17	23	15	6	
Q1136	Q3-11 DO YOU USE OR REFER TO HOLD FUNCTION OF A/D CONVERTERS	12	15	14	16	22	15	6	
Q1137	Q3-12 DO YOU USE OR REFER TO COMPARE FUNCTION OF A/D CONVERTERS	11	15	14	17	22	15	6	
Q1138	Q3-13 DO YOU USE OR REFER TO DIGITAL FUNCTION OF A/D CONVERTERS	11	17	15	20	29	15	6	
Q1139	Q3-14 DO YOU PERFORM ANY TASKS ON MECHANICAL ANALOG-TO-DIGITAL (A/D) CONVERTERS	10	8	9	10	9	8	3	
R1140	R1-01 DO YOU WORK WITH PHANTASTRON CIRCUITRY IN YOUR PRESENT JOB	24	28	27	41	41	39	21	PHANTASTRONS
R1141	R2-01 IN YOUR PRESENT JOB DO YOU WORK WITH SCHMITT TRIGGER CIRCUITS	52	58	56	59	57	51	39	
R1142	R2-02 DO YOU TRACE DATA FLOW THROUGH SCHMITT TRIGGER SCHEMATIC DIAGRAMS	47	53	51	54	54	48	39	SCHMITT TRIGGERS
R1143	R2-03 DO YOU USE OR REFER TO SCHMITT TRIGGER LOGIC SYMBOLS	40	41	40	41	42	33	24	
R1144	R3-01 IN YOUR PRESENT JOB DO YOU FABRICATE MULTICONDUCTOR CABLES	37	41	40	44	41	33	21	
R1145	R3-02 DO YOU FABRICATE COAXIAL CABLES	47	53	51	52	53	41	27	CABLE FABRICATION
S1146	S1-01 IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS ON VISUAL READOUT SYSTEMS	53	60	57	61	53	46	33	
S1147	S1-02 DO YOU PERFORM ANY TASKS ON NIXIE LIGHTS OR NIXIE LIGHT DECODER SYSTEMS	48	58	55	58	55	48	33	INPUT/OUTPUT DEVICES
S1148	S1-03 DO YOU ANALYZE NIXIE LIGHT DECODER SYSTEMS USING BOOLEAN ALGEBRA	16	17	16	16	16	7	6	
S1149	S2-01 DO YOU WORK WITH PHOTO TUBES IN YOUR PRESENT JOB	33	25	26	34	44	28	15	PHOTO SENSITIVE DEVICES
S1150	S3-01 IN YOUR PRESENT JOB DO YOU WORK WITH CHOPPER CIRCUITS	37	38	38	44	44	38	27	
S1151	S3-02 DO YOU MEASURE EXCITATION FREQUENCIES	22	18	19	29	31	20	29	
S1152	S3-03 DO YOU MEASURE VOLTAGE-CURRENT PHASE RELATIONSHIPS	13	12	12	17	19	8	15	
S1153	S3-04 DO YOU USE OR REFER TO EXCITATION FREQUENCIES	20	18	18	22	39	28	29	SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS)
S1154	S3-05 DO YOU USE OR REFER TO VOLTAGE-CURRENT PHASE RELATIONSHIPS	13	12	12	16	19	8	12	
S1155	S3-06 DO YOU USE SERVOS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	15	18	17	22	18	18	18	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	BY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
S1156	S3-07 DO YOU USE DETECTORS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	25	24	24	31	31	30	24	
S1157	S3-08 DO YOU USE ERROR SIGNAL DEVICES IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	22	23	23	31	35	33	21	
S1158	S3-09 DO YOU USE COMPARISON CIRCUITS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	26	26	26	33	39	33	21	
T1159	T1-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH INFRARED SYSTEMS	2	2	2	3	1	2	3	
T1160	T1-02 DO YOU INSPECT INFRARED SYSTEMS	2	1	2	2	0	2	3	
T1161	T1-03 DO YOU CLEAN INFRARED SYSTEMS	1	1	1	2	0	0	3	INFRARED
T1162	T1-04 DO YOU ADJUST OR CALIBRATE INFRARED SYSTEMS	2	1	1	2	0	2	0	
T1163	T1-05 DO YOU OPERATE INFRARED SYSTEMS	1	1	1	1	0	2	3	
T1164	T1-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF INFRARED SYSTEMS	2	1	2	2	0	2	3	
T1165	T1-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF INFRARED SYSTEMS	2	1	2	2	0	2	3	
T1166	T1-08 DO YOU TROUBLESHOOT DOWN TO INFRARED SYSTEM COMPONENT PARTS	2	1	2	2	0	2	3	
T1167	T1-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF INFRARED SYSTEMS	1	1	1	1	0	2	3	
T1168	T1-10 DO YOU REMOVE OR REPLACE INFRARED SYSTEM COMPONENT PARTS	2	1	1	3	0	2	3	
T1169	T1-11 DO YOU USE OR REFER TO FAR REGION	2	0	1	1	0	2	0	
T1170	T1-12 DO YOU USE OR REFER TO INTERMEDIATE REGION	2	0	1	1	0	2	0	
T1171	T1-13 DO YOU USE OR REFER TO NEAR REGION	2	0	1	1	0	2	0	
T1172	T1-14 DO YOU USE OR REFER TO MICRON	2	0	1	2	1	2	3	
T1173	T1-15 DO YOU USE OR REFER TO GRAY BODIES	1	0	0	1	0	2	0	
T1174	T1-16 DO YOU USE OR REFER TO BLACK BODIES	2	1	1	1	1	2	3	
T1175	T1-17 DO YOU USE OR REFER TO ABSORPTION	1	0	1	1	1	2	3	
T1176	T1-18 DO YOU USE OR REFER TO SCATTERING	1	0	0	1	1	2	3	
T1177	T1-19 DO YOU USE OR REFER TO ABSOLUTE ZERO	3	0	1	2	1	2	3	
T1178	T1-20 DO YOU PERFORM TASKS ON BLITZ	0	0	0	0	0	0	0	
T1179	T1-21 DO YOU PERFORM TASKS ON TARGET BUTTONS	0	0	0	0	0	2	3	
T1180	T1-22 DO YOU PERFORM TASKS ON ERECTOR LENSES	0	0	0	0	0	2	3	
T1181	T1-23 DO YOU PERFORM TASKS ON OCULAR LENSES	1	0	0	0	1	2	3	
T1182	T1-24 DO YOU PERFORM TASKS ON CORRECTION LENSES	0	0	0	0	0	2	0	
T1183	T1-25 DO YOU PERFORM TASKS ON FILTERS	1	0	1	1	0	2	3	
T1184	T1-26 DO YOU PERFORM TASKS ON SPHERICAL MIRRORS	2	0	1	0	0	2	3	
T1185	T1-27 DO YOU PERFORM TASKS ON PLANE MIRRORS	1	0	0	1	0	2	3	
T1186	T2-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH LASERS	0	1	1	1	1	0	0	
T1187	T2-02 DO YOU INSPECT LASER SYSTEMS	0	0	0	0	1	0	0	
T1188	T2-03 DO YOU CLEAN LASER SYSTEMS	0	0	0	0	0	0	0	LASERS
T1189	T2-04 DO YOU OPERATE LASER SYSTEMS	0	0	0	1	0	0	0	
T1190	T2-05 DO YOU OPERATE LASER SYSTEMS	0	0	0	1	0	0	0	
T1191	T2-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF LASER SYSTEMS	0	0	0	0	1	0	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
T1192	T2-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF LASER SYSTEMS	0	0	0	0	1	0	0
T1193	T2-08 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF LASER SYSTEMS	0	0	0	0	1	0	0
T1194	T2-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF LASER SYSTEMS	0	0	0	0	1	0	0
T1195	T2-10 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF LASER SYSTEMS	0	0	0	0	1	0	0
T1196	T2-11 DO YOU USE OR REFER TO ANGSTROMS (A)	0	0	0	1	0	0	0
T1197	T2-12 DO YOU USE OR REFER TO ELECTRON ENERGY LEVELS	0	0	0	0	0	0	0
T1198	T2-13 DO YOU USE OR REFER TO GROUND STATE	0	0	0	1	0	0	0
T1199	T2-14 DO YOU USE OR REFER TO EXCITED STATE	0	0	0	1	0	0	0
T1200	T2-15 DO YOU USE OR REFER TO PACKET OF RADIATION	0	0	0	0	0	0	0
T1201	T2-16 DO YOU USE OR REFER TO PHOTONS	0	0	0	1	1	0	0
T1202	T2-17 DO YOU USE OR REFER TO SPONTANEOUS EMISSION	0	0	0	0	0	0	0
T1203	T2-18 DO YOU USE OR REFER TO STIMULATED EMISSION	0	0	0	1	0	0	0
T1204	T2-19 DO YOU USE OR REFER TO COHERENCE OR INCOHERENCE	0	0	0	1	0	0	0
T1205	T2-20 DO YOU USE OR REFER TO INVERSION LEVEL	0	0	0	0	0	0	0
T1206	T2-21 DO YOU USE OR REFER TO MONOCHROMATIC	0	1	1	1	1	0	0
T1207	T2-22 DO YOU WORK WITH ACTIVE MATERIALS	0	0	0	0	0	0	0
T1208	T2-23 DO YOU WORK WITH PUMPING SOURCES	0	0	0	0	0	0	0
T1209	T2-24 DO YOU WORK WITH FULL SILVERED (100% REFLECTIVE) MIRRORS	0	0	0	0	0	0	0
T1210	T2-25 DO YOU WORK WITH HALF SILVERED (92% REFLECTIVE) MIRRORS	0	0	0	0	0	0	0
T1211	T2-26 DO YOU WORK WITH HELICAL FLASHTUBES	0	0	0	0	0	0	0
T1212	T2-27 DO YOU WORK WITH RUBY	0	0	0	0	0	0	0
T1213	T2-28 DO YOU WORK WITH HELIUM-NEON	0	0	0	1	0	0	0
T1214	T2-29 DO YOU WORK WITH HELIUM-XENON	0	0	0	0	0	0	0
T1215	T2-30 DO YOU WORK WITH XENON	0	0	0	0	0	0	0
T1216	T2-31 DO YOU WORK WITH CESIUM-HELIUM	0	0	0	0	0	0	0
T1217	T2-32 DO YOU WORK WITH ARGON	0	0	0	0	0	0	0
T1218	T2-33 DO YOU WORK WITH NEODYMIUM IN GLASS	0	0	0	0	0	0	0
T1219	T2-34 DO YOU WORK WITH GALLIUM ARSENIDE	0	0	0	0	0	0	0
T1220	T3-01 IN YOUR PRESENT JOB DO YOU WORK WITH DISPLAY TUBES, SUCH AS DIRECT VIEW STORAGE (DVST) OR MULTIPLE MODE	10	13	12	12	11	11	6
T1221	T3-02 DO YOU INSPECT DVST OR MMST	8	9	9	10	9	7	6
T1222	T3-03 DO YOU CLEAN DVST OR MMST	7	8	7	7	5	7	6
T1223	T3-04 DO YOU ADJUST OR CALIBRATE DVST OR MMST	5	8	7	8	9	8	6
T1224	T3-05 DO YOU OPERATE SYSTEMS THAT CONTAIN DVST OR MMST	8	10	10	11	10	8	9
T1225	T3-06 DO YOU TROUBLESHOOT DVST OR MMST CIRCUITS	8	10	9	10	9	7	9
T1226	T3-07 DO YOU REMOVE OR REPLACE DVST OR MMST TUBES FROM MAJOR ASSEMBLIES OR UNITS	8	9	9	10	8	7	9
T1227	T3-08 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF DVST	4	4	4	4	5	5	3

DISPLAY TUBES

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012	
T1228	T3-09 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF MMST	3	3	3	3	4	5	3	
T1229	T3-10 DO YOU PERFORM TASKS ON FLOOD GUNS	4	7	6	6	5	5	6	
T1230	T3-11 DO YOU PERFORM TASKS ON WRITE GUNS	4	7	6	7	5	5	6	
T1231	T3-12 DO YOU PERFORM TASKS ON ATTACK GUNS	3	4	3	5	2	2	3	
T1232	T3-13 DO YOU PERFORM TASKS ON ERASE GUNS	5	7	6	6	5	5	3	
T1233	T3-14 DO YOU PERFORM TASKS ON STORAGE GRIDS	7	7	7	7	5	5	6	
U1234	U1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY PROGRAMMING TASKS	1	4	3	3	3	2	9	
U1235	U1-02 DO YOU USE OR REFER TO DECIMAL SYSTEMS	0	4	3	3	3	3	12	
U1236	U1-03 DO YOU USE OR REFER TO PROGRAMS	0	3	2	3	3	2	6	PROGRAMMING
U1237	U1-04 DO YOU USE OR REFER TO HEXIDECIMAL SYSTEMS	0	1	1	1	2	0	3	
U1238	U1-05 DO YOU USE OR REFER TO 8-4-2-1 SYSTEMS	1	3	2	3	2	0	3	
U1239	U1-06 DO YOU USE OR REFER TO FOUR SYSTEMS	0	1	1	1	1	0	0	
U1240	U1-07 DO YOU USE OR REFER TO BINARY SYSTEMS	1	4	3	3	3	3	12	
U1241	U1-08 DO YOU USE OR REFER TO TIME-SHARING	0	3	2	2	3	3	3	
U1242	U1-09 DO YOU USE OR REFER TO DATA WORDS	0	3	2	2	3	2	6	
U1243	U1-10 DO YOU USE OR REFER TO ADDRESS WORDS	0	3	2	3	3	2	6	
U1244	U1-11 DO YOU USE OR REFER TO ADDRESS/SUBADDRESS	0	2	2	2	3	2	6	
U1245	U1-12 DO YOU USE OR REFER TO STEERING/INFORMATION	0	2	2	1	3	2	6	
U1246	U1-13 DO YOU USE OR REFER TO INFORMATION WORDS	0	2	2	3	3	2	6	
U1247	U1-14 DO YOU PERFORM TASKS ON SINGLE LEVEL PROGRAMMING	0	3	2	3	1	0	3	
U1248	U1-15 DO YOU PERFORM TASKS ON MULTI-LEVEL PROGRAMMING	0	1	1	3	1	0	0	
U1249	U1-16 DO YOU PERFORM TASKS ON INPUT DEVICES	0	3	2	3	0	0	3	
U1250	U1-17 DO YOU PERFORM TASKS ON STORAGE DEVICES	0	3	2	3	0	0	3	
U1251	U1-18 DO YOU PERFORM TASKS ON ARITHMETIC SECTIONS	0	3	2	3	0	0	3	
U1252	U1-19 DO YOU PERFORM TASKS ON CONTROL SECTIONS	1	3	2	2	1	0	0	
U1253	U1-20 DO YOU PERFORM TASKS ON OUTPUT DEVICES	0	2	2	1	1	0	3	
U1254	U1-21 DO YOU PERFORM TASKS ON POWER SUPPLIES	0	3	2	1	1	0	0	
U1255	U2-01 DO YOU USE DECIBELS TO EXPRESS AMPLIFICATION AND ATTENUATION	70	78	76	76	83	77	69	
U1256	U2-02 DO YOU USE LOGARITHMS TO COMPUTE OUTPUT POWER IN DECIBELS	39	37	37	53	57	49	45	DB AND POWER RATIOS
U1257	U2-03 DO YOU USE LOGARITHMS TO COMPUTE ATTENUATION IN DECIBELS	39	36	36	53	55	49	45	

UNITED STATES AIR FORCE
JOB INVENTORY

PRECISION MEAS. EQUIP SPECIALIST
AFSCS 316X0/93

A MATHEMATICS, DIRECT CURRENT, VOLTAGE, AND RESISTANCE

A 1 A1-01 DO YOU USE AN INSTRUMENT, SUCH AS METER OR AN OSCILLOSCOPE, IN WHICH IT IS NECESSARY TO AMPLIFY OR ATTENUATE A VOLTAGE, RESISTANCE, ETC., BY POWERS OF 10.
A 2 A1-02 DO YOU USE A PUBLICATION, SUCH AS A TECHNICAL ORDER OR MAINTENANCE MANUAL, IN WHICH IT IS NECESSARY FOR YOU TO MULTIPLY OR DIVIDE BY A POWER OF 10 BEFORE YOU CAN APPLY THE INFORMATION FROM THE PUBLICATION IN A USEFUL WAY ON THE JOB.
A 3 A1-03 DO YOU REARRANGE AND SOLVE FORMULAS OR EQUATIONS.
A 4 A1-04 DO YOU FIND THE SQUARE ROOT OF A QUANTITY.
A 5 A1-05 DO YOU SOLVE FOR AN UNKNOWN QUANTITY.
A 6 A1-06 DO YOU CONVERT NUMBERS TO LOGARITHMS.
A 7 A1-07 DO YOU USE LOGARITHM TABLES IN ANY TYPE OF CALCULATIONS.
A 8 A1-08 DO YOU SOLVE QUADRATIC EQUATIONS.
A 9 A1-09 DO YOU USE THE NATURAL SYSTEM OF LOGARITHMS (THIS IS THE LOGARITHM SYSTEM WHICH USES THE NUMBER 2.718 AS A BASE).
A 10 A1-10 DO YOU WORK WITH VECTOR QUANTITIES, SUCH AS ADDING OR SUBTRACTING TWO VECTORS.
A 11 A1-11 DO YOU WORK WITH TRIGONOMETRIC FUNCTIONS SUCH AS SINE, COSINE, OR TANGENT.
A 12 A1-12 DO YOU DETERMINE AREAS OF PLANE FIGURES, SUCH AS AREAS OF CIRCLES OR TRIANGLES.
A 13 A1-13 DO YOU SOLVE OR USE SIMULTANEOUS EQUATIONS.
A 14 A1-14 DO YOU SOLVE OR USE PROPORTIONS.
A 15 A2-01 DO YOU USE THE TERM VOLTAGE OR VOLT.
A 16 A2-02 DO YOU USE THE TERM ELECTROMOTIVE FORCE (EMF).
A 17 A2-03 DO YOU USE THE TERM OHM.
A 18 A2-04 DO YOU USE THE TERM ION.
A 19 A2-05 DO YOU USE THE TERM DYNE.
A 20 A2-06 DO YOU USE THE TERM AMPERE.
A 21 A2-07 DO YOU USE THE TERM NEUTRON.
A 22 A2-08 DO YOU USE THE TERM COULOMB.
A 23 A2-09 DO YOU USE THE TERM PROTON.
A 24 A3-01 DO YOU WORK WITH RESISTORS IN YOUR PRESENT JOB.
A 25 A3-02 DO YOU INSPECT RESISTORS.
A 26 A3-03 DO YOU CLEAN RESISTORS.
A 27 A3-04 DO YOU ADJUST RESISTORS.
A 28 A3-05 DO YOU CHECK OHMIC VALUE OF RESISTORS.
A 29 A3-06 DO YOU REMOVE OR REPLACE RESISTORS.
A 30 A3-07 DO YOU USE OR REFER TO TEMPERATURE COEFFICIENTS FOR RESISTORS ON ANY TASKS IN YOUR PRESENT JOB.
A 31 A3-08 DO YOU USE OR REFER TO RESISTOR SYMBOLS, SUCH AS FOR FIXED RESISTORS OR FOR TAPPED RESISTORS.
A 32 A3-09 DO YOU IDENTIFY OR CLASSIFY THE RESISTORS YOU WORK WITH AS CARBON, FIXED WIRE, SLIDE TAP, RHEOSTAT OR POTENTIOMETER.
A 33 A3-10 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE THE OHMIC VALUE OF RESISTANCE.
A 34 A3-11 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE THE TOLERANCE OF RESISTORS.
A 35 A3-12 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE THE FAILURE RATE OF RESISTORS.
A 36 A3-13 DO YOU MAKE DECISIONS IN WHICH YOU MUST DETERMINE HOW TWO OR MORE BATTERIES MUST BE CONNECTED TOGETHER TO ACHIEVE A SPECIFIC VOLTAGE.
A 37 A3-14 DO YOU USE OR REFER TO THE SCHEMATIC SYMBOLS WHICH REPRESENT ANY OF THE FOLLOWING COMPONENTS: BATTERY, FUSE, CONDUCTOR, LAMP OR SWITCH.
A 38 A3-15 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES RESISTIVE CIRCUITS.
A 39 A3-16 DO YOU CALCULATE TOTAL CURRENT FOR SERIES RESISTIVE CIRCUITS.
A 40 A3-17 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES RESISTIVE CIRCUITS.
A 41 A3-18 DO YOU CALCULATE POWER DISSIPATION FOR SERIES RESISTIVE CIRCUITS.
A 42 A3-19 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES PARALLEL RESISTIVE CIRCUITS.
A 43 A3-20 DO YOU CALCULATE TOTAL CURRENT FOR SERIES PARALLEL RESISTIVE CIRCUITS.
A 44 A3-21 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES PARALLEL RESISTIVE CIRCUITS.
A 45 A3-22 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR SERIES PARALLEL RESISTIVE CIRCUITS.
A 46 A3-23 DO YOU CALCULATE POWER DISSIPATION FOR SERIES PARALLEL RESISTIVE CIRCUITS.
A 47 A3-24 DO YOU CALCULATE TOTAL RESISTANCE FOR PARALLEL RESISTIVE CIRCUITS.
A 48 A3-25 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RESISTIVE CIRCUITS.
A 49 A3-26 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR PARALLEL RESISTIVE CIRCUITS.
A 50 A3-27 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR PARALLEL RESISTIVE CIRCUITS.
A 51 A3-28 DO YOU CALCULATE POWER DISSIPATION FOR PARALLEL RESISTIVE CIRCUITS.

B MULTIMETER USES, ALTERNATING CURRENT, INDUCTORS, AND INDUCTIVE

B 52 B1-01 DO YOU MEASURE RESISTANCE.
B 53 B1-02 DO YOU REPAIR AN OHMMETER.
B 54 B1-03 DO YOU MEASURE VOLTAGE.
B 55 B1-04 DO YOU REPAIR A VOLTMETER.
B 56 B1-05 DO YOU REPAIR AN AMMETER.
B 57 B1-06 DO YOU MEASURE CURRENT.
B 58 B1-07 DO YOU USE A MULTIMETER.
B 59 B1-08 DO YOU DIRECTLY USE A QUANTITY OF CHARGE CALLED A COULOMB.
B 60 B1-09 DO YOU READ SCHEMATICS.
B 61 B2-01 DO YOU USE OR REFER THE TERM EFFECTIVE VOLTAGE (RMS).
B 62 B2-02 DO YOU USE OR REFER THE TERM PEAK TO PEAK VOLTAGE.
B 63 B2-03 DO YOU USE OR REFER THE TERM AVERAGE VOLTAGE (DC).
B 64 B2-04 DO YOU USE OR REFER THE TERM WAVE LENGTH.
B 65 B2-05 DO YOU USE OR REFER THE TERM FREQUENCY.
B 66 B2-06 DO YOU USE OR REFER THE TERM INSTANTANEOUS VALUE.
B 67 B3-01 DO YOU WORK WITH INDUCTORS OR CIRCUITS CONTAINING INDUCTORS, CHOKES, OR CHOKE COILS IN YOUR PRESENT JOB.
B 68 B3-02 DO YOU INSPECT INDUCTORS.
B 69 B3-03 DO YOU CLEAN INDUCTORS.
B 70 B3-04 DO YOU ADJUST INDUCTORS.
B 71 B3-05 DO YOU REMOVE OR REPLACE INDUCTORS.
B 72 B3-06 DO YOU USE OR REFER TO INDUCTANCE.
B 73 B3-07 DO YOU USE OR REFER TO HENRIES.
B 74 B3-08 DO YOU USE OR REFER TO INDUCTIVE REACTANCE.
B 75 B3-09 DO YOU USE OR REFER TO COPPER LOSS IN INDUCTORS.
B 76 B3-10 DO YOU USE OR REFER TO HYSTERESIS LOSS IN INDUCTORS.
B 77 B3-11 DO YOU USE OR REFER TO EDDY CURRENT LOSS IN INDUCTORS.
B 78 B3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTANCE IS PROPORTIONAL TO THE SQUARE OF THE NUMBER OF TURNS OF THE COIL.
B 79 B3-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE CROSS SECTIONAL AREA OF THE CORE.
B 80 B3-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS INVERSELY PROPORTIONAL TO ITS LENGTH.
B 81 B3-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE PERMEABILITY OF THE CORE MATERIAL.
B 82 B3-16 DO YOU CALCULATE INDUCTANCE FOR A PARTICULAR INDUCTOR USING FORMULAS.
B 83 B3-17 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES.
B 84 B3-18 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN PARALLEL.
B 85 B3-19 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES-PARALLEL CIRCUITS.
B 86 B3-20 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LAGS VOLTAGE IN AC INDUCTOR CIRCUITS.
B 87 B3-21 DO YOU CALCULATE INDUCTIVE REACTANCE.
B 88 B3-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTIVE REACTANCE IS DIRECTLY PROPORTIONAL TO FREQUENCY.
B 89 B3-23 DO YOU WORK WITH POWER INDUCTORS.
B 90 B3-24 DO YOU WORK WITH AUDIO FREQUENCY INDUCTORS.
B 91 B3-25 DO YOU WORK WITH RADIO FREQUENCY INDUCTORS.

C CAPACITORS, CAPACITIVE REACTANCE, TRANSFORMERS, AND MAGNETISM

C 92 C1-01 DO YOU WORK WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS ON YOUR PRESENT JOB.
C 93 C1-02 DO YOU INSPECT CAPACITORS.
C 94 C1-03 DO YOU CLEAN CAPACITORS.
C 95 C1-04 DO YOU ADJUST CAPACITORS.
C 96 C1-05 DO YOU TEST CAPACITORS.
C 97 C1-06 DO YOU DISCHARGE CAPACITORS.
C 98 C1-07 DO YOU REMOVE OR REPLACE CAPACITORS.
C 99 C1-08 DO YOU USE OR REFER TO DISTRIBUTED CAPACITANCE.
C100 C1-09 DO YOU USE OR REFER TO ORBITAL STRESS OF ELECTRONS IN A DIELECTRIC.
C101 C1-10 DO YOU USE OR REFER TO FARADS, MICROFARADS, OR PICOFARADS.
C102 C1-11 DO YOU USE OR REFER TO CAPACITANCE.
C103 C1-12 DO YOU USE OR REFER TO DIELECTRIC CONSTANT.
C104 C1-13 DO YOU USE OR REFER TO WORKING VOLTAGE RATING OF CAPACITORS.
C105 C1-14 DO YOU USE OR REFER TO CAPACITIVE REACTANCE.
C106 C1-15 DO YOU USE OR REFER TO CAPACITOR COLOR CODES.
C107 C1-16 THE CAPACITORS YOU WORK WITH IN DC CIRCUITS.
C108 C1-17 THE CAPACITORS YOU WORK WITH ARE IN AC CIRCUITS.
C109 C1-18 THE CAPACITORS YOU WORK WITH ARE IN CIRCUITS WITH BOTH DC AND AC.
C110 C1-19 THE CAPACITORS YOU WORK WITH ARE DON'T REMEMBER WHICH CIRCUITS.
C111 C1-20 DO YOU CALCULATE CAPACITANCE FOR A PARTICULAR CAPACITOR USING FORMULAS.
C112 C1-21 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE CAPACITANCE OF A CAPACITOR IS DIRECTLY PROPORTIONAL TO THE DIELECTRIC CONSTANT.
C113 C1-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE CAPACITANCE OF A CAPACITOR IS INVERSELY PROPORTIONAL TO THE DIELECTRIC THICKNESS.
C114 C1-23 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES.
C115 C1-24 DO YOU CALCULATE THE TOTAL CAPACITANCE OF

CAPACITORS IN PARALLEL.
C116 C1-25 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES-PARALLEL CIRCUITS.
C117 C1-26 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT DOES NOT FLOW THROUGH CAPACITORS, IT ONLY APPEARS TO DO SO.
C118 C1-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEADS VOLTAGE IN AC CAPACITOR CIRCUITS.
C119 C1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITIVE REACTANCE IS INVERSELY PROPORTIONAL TO FREQUENCY.
C120 C1-29 DO YOU CALCULATE CAPACITIVE REACTANCE.
C121 C1-30 DO YOU WORK WITH ROTOR-STATOR CAPACITORS (VARIABLE).
C122 C1-31 DO YOU WORK WITH COMPRESSION (TRIMMER) CAPACITORS.
C123 C1-32 DO YOU WORK WITH ELECTROLYTIC CAPACITORS (FIXED).
C124 C1-33 DO YOU WORK WITH PAPER CAPACITORS (FIXED).
C125 C1-34 DO YOU WORK WITH MICA CAPACITORS (FIXED).
C126 C1-35 DO YOU WORK WITH CERAMIC CAPACITORS (FIXED).
C127 C1-36 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF CAPACITORS.
C128 C2-01 DO YOU WORK WITH TRANSFORMERS ON YOUR PRESENT JOB.
C129 C2-02 DO YOU INSPECT TRANSFORMERS.
C130 C2-03 DO YOU CLEAN TRANSFORMERS.
C131 C2-04 DO YOU ADJUST TRANSFORMERS.
C132 C2-05 DO YOU TROUBLESHOOT TRANSFORMERS.
C133 C2-06 DO YOU REMOVE OR REPLACE COMPLETE TRANSFORMERS.
C134 C2-07 DO YOU REMOVE OR REPLACE TRANSFORMER PARTS, SUCH AS THE PRIMARY WINDING.
C135 C2-08 DO YOU MAKE A DISTINCTION BETWEEN MUTUAL INDUCTION AND MUTUAL INDUCTANCE (M).
C136 C2-09 DO YOU USE THE SYMBOL FOR MUTUAL INDUCTANCE, M.
C137 C2-10 DO YOU REFER TO OR USE THE COEFFICIENT OF COUPLING WHEN WORKING WITH TRANSFORMERS.
C138 C2-11 DO YOU CALCULATE TURNS RATIOS FOR TRANSFORMERS USING CURRENT OR VOLTAGE RATIOS.
C139 C2-12 DO YOU REFER TO REFLECTED IMPEDANCE WHEN WORKING WITH TRANSFORMERS.
C140 C2-13 DO YOU CALCULATE IMPEDANCE INTERACTIONS FOR TRANSFORMERS.
C141 C2-14 DO YOU WORK WITH AUTOTRANSFORMERS.
C142 C2-15 DO YOU WORK WITH POWER TRANSFORMERS.
C143 C2-16 DO YOU WORK WITH AUDIO TRANSFORMERS.
C144 C2-17 DO YOU WORK WITH RADIO FREQUENCY TRANSFORMERS.
C145 C2-18 DO YOU WORK WITH DON'T REMEMBER WHAT TYPE OF TRANSFORMER.
C146 C2-19 DO YOU CHECK TRANSFORMERS FOR OPEN WINDINGS BY MEASURING RESISTANCE.
C147 C2-20 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING RESISTANCE.
C148 C2-21 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING OUTPUT VOLTAGES.
C149 C2-22 DO YOU MEASURE RESISTANCE OF TRANSFORMER WINDINGS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO.
C150 C2-23 DO YOU MEASURE OUTPUT VOLTAGE OF TRANSFORMERS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO.
C151 C2-24 DO YOU REFER TO THE BASIC TRANSFORMER SCHEMATIC SYMBOLS FOR TRANSFORMERS.
C152 C2-25 DO YOU REFER TO THE MULTIPLE SECONDARY-WINDINGS SCHEMATIC SYMBOLS FOR TRANSFORMERS.
C153 C2-26 DO YOU REFER TO THE MULTIPLE TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS.
C154 C2-27 DO YOU REFER TO THE CENTER TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS.
C155 C2-28 DO YOU REFER TO THE AIR CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS.
C156 C2-29 DO YOU REFER TO THE IRON CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS.
C157 C2-30 DO YOU REFER TO THE COMBINATIONS OF THE ABOVE SCHEMATIC SYMBOLS FOR TRANSFORMERS.
C158 C2-31 DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING SCHEMATIC SYMBOLS.
C159 C2-32 DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN TRANSFORMERS YOU WORK WITH.
C160 C2-33 DO YOU REFER TO OR USE THE GENERAL RULE THAT THE TURNS RATIO OF A TRANSFORMER IS EQUAL TO THE VOLTAGE RATIO.
C161 C2-34 DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN RATIOS FOR TRANSFORMERS.
C162 C2-35 DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS USING TURNS RATIOS.
C163 C2-36 DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS USING TURNS RATIOS.
C164 C2-37 DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH 3 PHASE TRANSFORMERS.
C165 C2-38 DO YOU INSPECT 3 PHASE TRANSFORMERS.
C166 C2-39 DO YOU CLEAN OR LUBRICATE 3 PHASE TRANSFORMERS.
C167 C2-40 DO YOU ADJUST 3 PHASE TRANSFORMERS.
C168 C2-41 DO YOU TROUBLESHOOT 3 PHASE TRANSFORMERS.
C169 C2-42 DO YOU REMOVE OR REPLACE COMPLETE 3 PHASE TRANSFORMER.
C170 C2-43 DO YOU REMOVE OR REPLACE 3 PHASE TRANSFORMER PARTS, SUCH AS A WINDING.
C171 C3-01 DO YOU USE OR REFER TO PERMANENT MAGNETS.
C172 C3-02 DO YOU USE OR REFER TO TEMPORARY MAGNETS.
C173 C3-03 DO YOU USE OR REFER TO RETENTIVITY OF MAGNETIC MATERIALS.
C174 C3-04 DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC MATERIALS.
C175 C3-05 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS.

C176 C3-06 DO YOU USE OR REFER TO RESIDUAL MAGNETISM.
C177 C3-07 DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE OR FLUX.
C178 C3-08 DO YOU USE OR REFER TO WEBER'S THEORY OF MAGNETISM.
C179 C3-09 DO YOU USE OR REFER TO THE DOMAIN THEORY OF MAGNETISM.
C180 C3-10 DO YOU USE OR REFER TO MAGNETIC INDUCTION.
C181 C3-11 DO YOU USE OR REFER TO FLUX DENSITY.
C182 C3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT FOR MAGNETIC POLES, LIKE POLES REPEL AND UNLIKE POLES ATTRACT.
C183 C3-13 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE DIRECTION OF MAGNETIC FIELDS ABOUT STRAIGHT WIRES.
C184 C3-14 DO YOU USE THE LEFT THUMB RULE TO FIND THE NORTH POLE OF A CURRENT CARRYING COIL.

D RCL CIRCUITS, SERIES AND PARALLEL RESONANCE (TIME CONSTANTS), AND FILTERS

D185 D1-01 DO YOU WORK WITH RC, LR, OR RCL CIRCUITS ON YOUR PRESENT JOB.
D186 D1-02 DO YOU USE OR REFER TO VECTORS WHEN WORKING WITH RCL CIRCUITS.
D187 D1-03 DO YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN WORKING WITH RCL CIRCUITS.
D188 D1-04 DO YOU USE OR REFER TO SINE WHEN WORKING WITH RCL CIRCUITS.
D189 D1-05 DO YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL CIRCUITS.
D190 D1-06 DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL CIRCUITS.
D191 D1-07 DO YOU USE OR REFER TO WATTS WHEN WORKING WITH RCL CIRCUITS.
D192 D1-08 DO YOU USE OR REFER TO TRUE POWER (PT) WHEN WORKING WITH RCL CIRCUITS.
D193 D1-09 DO YOU USE OR REFER TO MAXIMUM POWER (PM) WHEN WORKING WITH RCL CIRCUITS.
D194 D1-10 DO YOU USE OR REFER TO AVERAGE POWER (PAVE) WHEN WORKING WITH RCL CIRCUITS.
D195 D1-11 DO YOU USE OR REFER TO APPARENT POWER (PA) WHEN WORKING WITH RCL CIRCUITS.
D196 D1-12 DO YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING WITH RCL CIRCUITS.
D197 D1-13 DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN WORKING WITH RCL CIRCUITS.
D198 D1-14 DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH RCL CIRCUITS.
D199 D1-15 DO YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH RCL CIRCUITS.
D200 D1-16 DO YOU USE OR REFER TO RESONANT FREQUENCY WHEN WORKING WITH RCL CIRCUITS.
D201 D1-17 DO YOU USE OR REFER TO HALF POWER POINTS WHEN WORKING WITH RCL CIRCUITS.
D202 D1-18 DO YOU USE OR REFER TO BRANDPASS REGION WHEN WORKING WITH RCL CIRCUITS.
D203 D1-19 DO YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH RCL CIRCUITS.
D204 D1-20 DO YOU USE OR REFER TO TANK CIRCUITS WHEN WORKING WITH RCL CIRCUITS.
D205 D1-21 DO YOU DETERMINE VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS: SINE OF AN ANGLE = OPPOSITE SIDE DIVIDED BY HYPOTENUSE.
D206 D1-22 DO YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS.
D207 D1-23 DO YOU CALCULATE TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS.
D208 D1-24 DO YOU CALCULATE PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS.
D209 D1-25 DO YOU CALCULATE TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS.
D210 D1-26 DO YOU CALCULATE IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS.
D211 D1-27 DO YOU CALCULATE APPARENT POWER (PA) FOR SERIES RCL CIRCUITS.
D212 D1-28 DO YOU CALCULATE TRUE POWER (PT) FOR SERIES RCL CIRCUITS.
D213 D1-29 DO YOU CALCULATE POWER FACTORS (PF) FOR SERIES RCL CIRCUITS.
D214 D1-30 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RCL CIRCUITS.
D215 D1-31 DO YOU CALCULATE IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS.
D216 D1-32 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING THE ASSUMED VOLTAGE METHOD.
D217 D1-33 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING OHM'S LAW.
D218 D1-34 DO YOU CHECK CAPACITORS USING OHMMETERS.
D219 D1-35 DO YOU CHECK CAPACITORS USING SUBSTITUTION.
D220 D1-36 DO YOU CHECK INDUCTORS USING OHMMETERS.
D221 D1-37 DO YOU CHECK INDUCTORS USING SUBSTITUTION.
D222 D1-38 DO YOU USE OR REFER TO THE GENERAL RULE THAT THETA=0, PF=1, AND PA=PT FOR RESONANT CIRCUITS.
D223 D1-39 DO YOU CALCULATE RESONANT FREQUENCIES FOR RCL CIRCUITS.
D224 D1-40 DO YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE RESONANT FREQUENCY FOR SERIES RCL CIRCUITS.
D225 D1-41 DO YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT RESONANT FREQUENCY FOR PARALLEL RCL CIRCUITS.
D226 D1-42 DO YOU USE OR REFER TO THE GENERAL RULE THAT HALF POWER POINTS ARE AT 70.7 PERCENT OF THE PEAK CURRENT VALUE.

D227 D1-43 DO YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO Q.
D228 D1-44 DO YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE, CAPACITANCE, OR INDUCTANCE WILL AFFECT CURRENT, OR PHASE ANGLES FOR RCL CIRCUITS.
D229 D2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH, USE, OR REFER TO SERIES OR PARALLEL RESONANCE CIRCUITS OR TIME CONSTANTS.
D230 D2-02 DO YOU WORK WITH, USE, OR REFER TO TIME CONSTANTS.
D231 D2-03 DO YOU WORK WITH, USE, OR REFER TO AVAILABLE VOLTAGE.
D232 D2-04 DO YOU WORK WITH, USE, OR REFER TO TRANSIENT INTERVALS.
D233 D2-05 DO YOU USE OR REFER TO THE GENERAL RULE THAT A CAPACITOR IS FULLY CHARGED (OR DISCHARGED) AFTER FIVE (5) TIME CONSTANTS (TC).
D234 D2-06 DO YOU USE OR REFER TO UNIVERSAL TIME CONSTANT CHARTS.
D235 D2-07 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CIRCUITS CURRENT OR COMPONENT VOLTAGES AFTER A SPECIFIC TIME FOR RC OR LR CIRCUITS.
D236 D2-08 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE THE TIME REQUIRED FOR CIRCUIT CURRENT OR COMPONENT VOLTAGES TO REACH SPECIFIC VALUES FOR RC OR LR CIRCUITS.
D237 D2-09 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE COMPONENT VALUES REQUIRED FOR CIRCUIT CURRENT AND COMPONENT VOLTAGES TO REACH SPECIFIC VALUES IN A SPECIFIC TIME.
D238 D2-10 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT IN LR CIRCUITS REACHES ITS MINIMUM VALUE (OR ZERO) AFTER FIVE (5) TIME CONSTANTS.
D239 D3-01 DO YOU WORK WITH CIRCUITS USED AS FILTERS ON YOUR PRESENT JOB.
D240 D3-02 DO YOU INSPECT FILTER CIRCUITS.
D241 D3-03 DO YOU CLEAN FILTER CIRCUITS.
D242 D3-04 DO YOU ALIGN OR ADJUST FILTER CIRCUITS.
D243 D3-05 DO YOU TROUBLESHOOT TO THE FILTER CIRCUIT.
D244 D3-06 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF FILTER CIRCUITS.
D245 D3-07 DO YOU REMOVE OR REPLACE THE COMPLETE FILTER CIRCUIT.
D246 D3-08 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF FILTER CIRCUITS.
D247 D3-09 DO YOU WORK ON LOW PASS FILTERS.
D248 D3-10 DO YOU WORK ON HIGH PASS FILTERS.
D249 D3-11 DO YOU WORK ON BANDPASS FILTERS.
D251 D3-13 DO YOU WORK ON DON'T REMEMBER WHICH TYPE OF FILTER
D250 D3-12 DO YOU WORK ON BAND-REJECT FILTERS.
D252 D3-14 DO YOU WORK WITH L-SECTION FILTER CONFIGURATIONS.
D253 D3-15 DO YOU WORK WITH T-SECTION FILTER CONFIGURATIONS.
D254 D3-16 DO YOU WORK WITH PI-SECTION FILTER CONFIGURATIONS.
D255 D3-17 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF FILTER CONFIGURATIONS.
D256 D3-18 ARE PARALLEL RESONANT CIRCUITS USED IN FILTERS YOU WORK WITH.
D257 D3-19 ARE SERIES-PARALLEL CIRCUITS USED IN FILTERS YOU WORK WITH.
D258 D3-20 ARE SERIES RESONANT CIRCUITS USED IN FILTERS YOU WORK WITH.
D259 D3-21 ARE DON'T REMEMBER WHICH TYPE OF BASIC CIRCUIT USED IN FILTERS YOU WORK WITH.
D260 D3-22 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CAPACITANCE OR INDUCTANCE VALUES REQUIRED FOR SPECIFIC FILTERS.

E COUPLING, SOLDERING, AND RELAYS

E261 E1-01 DO YOU WORK WITH COUPLING DEVICES ON YOUR PRESENT JOB.
E262 E1-02 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH RC COUPLING.
E263 E1-03 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH IMPEDANCE COUPLING.
E264 E1-04 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH TRANSFORMER COUPLING.
E265 E1-05 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THE RC COUPLING FUNCTIONS.
E266 E1-06 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THE IMPEDANCE COUPLING FUNCTIONS.
E267 E1-07 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THE TRANSFORMER COUPLING FUNCTIONS.
E268 E1-08 DO YOU WORK WITH DIRECTLY COUPLED CIRCUITS.
E269 E1-09 DO YOU WORK WITH CAPACITIVE-RESISTIVE COUPLED CIRCUITS.
E270 E1-10 DO YOU WORK WITH CAPACITIVE-INDUCTIVE COUPLED CIRCUITS.
E271 E1-11 DO YOU WORK WITH TRANSFORMER COUPLED CIRCUITS.
E272 E1-12 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF COUPLING CIRCUIT.
E273 E2-01 ON YOUR PRESENT JOB DO YOU PERFORM SOLDERING TECHNIQUES OR INSPECT OR EVALUATE SOLDERED CONNECTIONS.
E274 E2-02 DO YOU SELECT TYPE OF SOLDER TO USE.
E275 E2-03 DO YOU ADD FLUX TO CONNECTIONS.
E276 E2-04 DO YOU CLEAN CONNECTIONS USING SOLVENTS.
E277 E2-05 DO YOU STRIP INSULATION FROM WIRES.
E278 E2-06 DO YOU CONNECT OR DISCONNECT HEAT SINKS.
E279 E2-07 DO YOU BEND OR SHAPE WIRES OR LEADS.
E280 E2-08 DO YOU CUT WIRES.
E281 E2-09 DO YOU FILE OR SHAPE SOLDERING IRON TIPS.
E282 E2-10 DO YOU TIN SOLDERING IRON TIPS.

E283 E2-11 DO YOU CLEAN SOLDERING IRON TIPS.
E284 E2-12 DO YOU CLEAN ELECTRICAL SURFACES USING ERASERS.
E285 E2-13 DO YOU TIN OR PRE-TIN CONDUCTORS.
E286 E2-14 DO YOU INSPECT SOLDERED CONNECTIONS.
E287 E2-15 DO YOU DESOLDER CONNECTIONS BY WICKING.
E288 E2-16 DO YOU DESOLDER CONNECTIONS USING VACUUM DESOLDERING TOOLS.
E289 E2-17 DO YOU CUT COMPONENT LEADS TO REMOVE COMPONENTS.
E290 E2-18 DO YOU CRUSH COMPONENTS FOR REMOVAL.
E291 E2-19 DO YOU MAKE HARDWIRE CONNECTIONS.
E292 E2-20 DO YOU MAKE PRINTED CIRCUIT BOARD CONNECTIONS
E293 E2-21 DO YOU SOLDER PASSIVE COMPONENTS SUCH AS RESISTORS OR CAPACITORS ON PRINTED CIRCUIT BOARDS
E294 E2-22 DO YOU SOLDER ACTIVE COMPONENTS SUCH AS SOLID-STATE DIODES OR TRANSISTORS ON PRINTED CIRCUIT BOARDS
E295 E3-01 DO YOU WORK WITH RELAYS ON YOUR PRESENT JOB
E296 E3-02 DO YOU ADJUST RELAYS
E297 E3-03 DO YOU CLEAN RELAYS
E298 E3-04 DO YOU INSPECT RELAYS
E299 E3-05 DO YOU REMOVE OR REPLACE COMPLETE RELAYS
E300 E3-06 DO YOU REMOVE OR REPLACE PARTS OR RELAYS
E301 E3-07 DO YOU TROUBLESHOOT RELAYS
E302 E3-08 DO YOU STRAIGHTEN RELAY CONTACTS
E303 E3-09 DO YOU PERFORM TASKS ON RELAY CONTACTS
E304 E3-10 DO YOU PERFORM TASKS ON RELAY CORES
E305 E3-11 DO YOU PERFORM TASKS ON RELAY COILS
E306 E3-12 DO YOU PERFORM TASKS ON RELAY ARMATURES
E307 E3-13 DO YOU PERFORM TASKS ON RELAY SPRINGS
E308 E3-14 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY OPEN (NO) SCHEMATIC SYMBOLS FOR RELAYS
E309 E3-15 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY CLOSED (NC) SCHEMATIC SYMBOLS FOR RELAYS
E310 E3-16 DO YOU USE OR REFER TO SINGLE POLE, DOUBLE THROW (SPDT) SCHEMATIC SYMBOLS FOR RELAYS
E311 E3-17 DO YOU USE OR REFER TO DOUBLE POLE, DOUBLE THROW (DPDT) SCHEMATIC SYMBOLS FOR RELAYS
E312 E3-18 DO YOU USE OR REFER TO OTHER RELAY SYMBOLS SCHEMATIC SYMBOLS FOR RELAYS
E313 E3-19 DO YOU CHECK ELECTRICAL CONTINUITY OF COILS BY MEASURING RESISTANCE

F MICROPHONES, SPEAKERS, AND OSCILLOSCOPES

F314 F1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH MICROPHONES
F315 F1-02 DO YOU INSPECT MICROPHONES
F316 F1-03 DO YOU CLEAN MICROPHONES
F317 F1-04 DO YOU OPERATE MICROPHONES
F318 F1-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT PARTS OR MICROPHONES
F319 F1-06 DO YOU TROUBLESHOOT DOWN TO MICROPHONE PARTS
F320 F1-07 DO YOU REMOVE OR REPLACE COMPLETE MICROPHONES
F321 F1-08 DO YOU REMOVE OR REPLACE MICROPHONE PARTS
F322 F1-09 DO YOU PERFORM TASKS ON CARBON MICROPHONES
F323 F1-10 DO YOU PERFORM TASKS ON CAPACITOR MICROPHONES
F324 F1-11 DO YOU PERFORM TASKS ON CRYSTAL MICROPHONES
F325 F1-12 DO YOU PERFORM TASKS ON DYNAMIC MICROPHONES
F326 F1-13 DO YOU PERFORM TASKS ON VELOCITY RIBBON MICROPHONES
F327 F2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH SPEAKERS
F328 F2-02 DO YOU INSPECT SPEAKERS
F329 F2-03 DO YOU CLEAN SPEAKERS
F330 F2-04 DO YOU OPERATE SPEAKERS
F331 F2-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT PARTS OF SPEAKERS
F332 F2-06 DO YOU TROUBLESHOOT DOWN TO SPEAKER PARTS
F333 F2-07 DO YOU REMOVE OR REPLACE COMPLETE SPEAKERS
F334 F2-08 DO YOU REMOVE OR REPLACE SPEAKER PARTS
F335 F2-09 DO YOU PERFORM ANY TASKS ON SPEAKER CONES
F336 F2-10 DO YOU PERFORM ANY TASKS ON SPEAKER SPIDERS
F337 F2-11 DO YOU PERFORM ANY TASKS ON SPEAKER FIELD COILS
F338 F2-12 DO YOU PERFORM ANY TASKS ON SPEAKER VOICE COILS
F339 F2-13 DO YOU PERFORM ANY TASKS ON SPEAKER PERMANENT MAGNETS
F340 F2-14 DO YOU PERFORM ANY TASKS ON SPEAKER ELECTROMAGNETS
F341 F2-15 DO YOU PERFORM ANY TASKS ON SPEAKER SOFT IRON CORES
F342 F3-01 DO YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB
F343 F3-02 DO YOU USE OSCILLOSCOPES TO PERFORM OPERATIONAL CHECKS
F344 F3-03 DO YOU USE OSCILLOSCOPES TO PERFORM ALIGNMENTS OR ADJUSTMENTS
F345 F3-04 DO YOU USE OSCILLOSCOPES TO TROUBLESHOOT ELECTRONIC CIRCUITS
F346 F3-05 DO YOU USE OSCILLOSCOPES TO MEASURE FREQUENCY
F347 F3-06 DO YOU USE OSCILLOSCOPES TO MEASURE TIME
F348 F3-07 DO YOU USE OSCILLOSCOPES TO OBSERVE LISAJOUS PATTERNS
F349 F3-08 DO YOU USE OSCILLOSCOPES TO OBSERVE SIGNALS WHILE UTILIZING ATTENUATOR PROBES
F350 F3-09 DO YOU USE OSCILLOSCOPES TO MAKE FREQUENCY OR TIME MEASUREMENTS USING DELAY TIME MULTIPLIERS
F351 F3-10 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE
F352 F3-11 DO YOU USE OSCILLOSCOPES TO MEASURE OR OBSERVE SIGNALS AFTER FIRST ADJUSTING THE GAIN AND DC BAL CONTROLS
F353 F3-12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE

G SEMICONDUCTOR DIODES, TRANSISTORS, AND TRANSISTOR AMPLIFIERS

G354 G1-01 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT JOB
G355 G1-02 DO YOU INSPECT DIODES
G356 G1-03 DO YOU REMOVE OR REPLACE DIODES
G357 G1-04 DO YOU CHECK DIODES USING AN INSTRUMENT

G358 G1-05 DO YOU USE ENERGY LEVEL DIAGRAMS IN YOUR WORK WITH DIODES
G359 G1-06 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES, TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE, TO COMPUTE FORWARD OR REVERSE LIAS RESISTANCE
G360 G1-07 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR DIODES
G361 G1-08 DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES
G362 G1-09 DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO OTHER ELECTRONIC COMPONENTS, SUCH AS RESISTORS, BASED ON THEIR PHYSICAL APPEARANCE
G363 G1-10 DO YOU REFER TO OR DO YOU DETERMINE THE GENERAL EFFECTS OF DOPING ON CURRENT FLOW
G364 G1-11 DO YOU USE OR REFER TO MEASUREMENTS OF FORWARD BIAS RESISTANCE
G365 G1-12 DO YOU USE OR REFER TO DIODE COLOR CODING
G366 G1-13 DO YOU USE OR REFER TO CENTRIFUGAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS
G367 G1-14 DO YOU USE OR REFER TO CENTRIPETAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS
G368 G1-15 DO YOU USE OR REFER TO DIODE NUMBERING SYSTEM, SUCH AS IN 538
G369 G1-16 DO YOU USE OR REFER TO KINETIC ENERGY OF AN ELECTRON MOVING IN ORBIT
G370 G1-17 DO YOU USE OR REFER TO POTENTIAL ENERGY OF AN ELECTRON MOVING IN ORBIT
G371 G1-18 DO YOU USE OR REFER TO MEASUREMENTS OF REVERSE BIAS RESISTANCE
G372 G1-19 DO YOU USE OR REFER TO NUMBER OF ELECTRONS IN A PARTICULAR SHELL OR ORBIT
G373 G1-20 DO YOU USE OR REFER TO PERMISSIBLE ENERGY LEVELS OF AN ORBITING ELECTRON
G374 G1-21 DO YOU USE OR REFER TO FORBIDDEN ENERGY LEVELS OF AN ORBITING ELECTRON
G375 G1-22 DO YOU USE OR REFER TO VALENCE ELECTRONS (THOSE IN THE OUTERMOST SHELL)
G376 G1-23 DO YOU USE OR REFER TO ATOMIC NUMBER (TOTAL NUMBER OF ELECTRONS IN ATOM)
G377 G1-24 DO YOU USE OR REFER TO SYMBOLS ON THE DIODE WHICH INDICATE THE CATHODE END
G378 G1-25 DO YOU NEED TO KNOW WHICH MATERIALS ARE USED IN THE CONSTRUCTION OF DIODES SUCH AS GERMANIUM OR SILICON
G379 G1-26 DO YOU NEED TO KNOW THAT SEMICONDUCTORS HAVE NEGATIVE TEMPERATURE COEFFICIENTS OF RESISTANCE (AS TEMPERATURE INCREASES RESISTANCE DECREASES)
G380 G1-27 DO YOU USE OR REFER TO PN JUNCTION DIODE CHARACTERISTIC CURVES, SUCH AS VOLTAGE - CURRENT CHARACTERISTIC CURVES (PERHAPS YOU DO THIS TO IDENTIFY POINTS OF STRUCTURAL BREAKDOWN OR OPERATING REGIONS)
G381 G1-28 DO YOU DETERMINE WHETHER PN JUNCTION DIODES ARE FORWARD BIASED OR REVERSE BIASED WHEN YOU READ OR INTERPRET CIRCUIT DIAGRAMS
G382 G1-29 DO YOU USE OR REFER TO VALENCE BAND IN SEMICONDUCTOR MATERIALS
G383 G1-30 DO YOU USE OR REFER TO FORBIDDEN BAND IN SEMICONDUCTOR MATERIALS
G384 G1-31 DO YOU USE OR REFER TO CONDUCTION BAND IN SEMICONDUCTOR MATERIALS
G385 G1-32 DO YOU USE OR REFER TO COVALENT BONDING IN SEMICONDUCTOR MATERIALS
G386 G1-33 DO YOU USE OR REFER TO ELECTRON-HOLE PAIR CREATED IN SEMICONDUCTORS
G387 G1-34 DO YOU USE OR REFER TO ELECTRON FLOW OR HOLE FLOW IN SEMICONDUCTORS
G388 G1-35 DO YOU USE OR REFER TO DONOR IMPURITY IN SEMICONDUCTORS
G389 G1-36 DO YOU USE OR REFER TO ACCEPTOR IMPURITY IN SEMICONDUCTORS
G390 G1-37 DO YOU USE OR REFER TO P-TYPE SEMICONDUCTOR MATERIAL
G391 G1-38 DO YOU USE OR REFER TO N-TYPE SEMICONDUCTOR MATERIAL
G392 G1-39 DO YOU USE OR REFER TO MAJORITY CARRIERS IN SEMICONDUCTORS
G393 G1-40 DO YOU USE OR REFER TO MINORITY CARRIERS IN SEMICONDUCTORS
G394 G1-41 DO YOU USE OR REFER TO JUNCTION RECOMBINATION IN SEMICONDUCTORS
G395 G1-42 DO YOU USE OR REFER TO DEPLETION REGION IN SEMICONDUCTORS
G396 G1-43 DO YOU USE OR REFER TO RELATIONSHIP BETWEEN BARRIER WIDTH AND DIFFERENCE OF POTENTIAL
G397 G1-44 DO YOU USE OR REFER TO THE 10:1 BACK TO FRONT RESISTANCE RATIO FOR DIODES
G398 G1-45 DO YOU USE OR REFER TO BARRIER HEIGHT IN SEMICONDUCTORS
G399 G1-46 DO YOU USE OR REFER TO DIODE SUBSTITUTION INFORMATION
G400 G1-47 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD CURRENT DIODE RATINGS
G401 G1-48 DO YOU USE OR REFER TO PEAK RECURRENT FORWARD CURRENT DIODE RATINGS
G402 G1-49 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT DIODE RATINGS
G403 G1-50 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE DIODE RATINGS
G404 G2-01 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB.
G405 G2-02 DO YOU INSPECT TRANSISTORS
G406 G2-03 DO YOU REMOVE OR REPLACE TRANSISTORS
G407 G2-04 DO YOU CHECK TRANSISTORS USING AN INSTRUMENT
G408 G2-05 DO YOU USE OR REFER TO EMITTER - BASE (EB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS
G409 G2-06 DO YOU USE OR REFER TO COLLECTOR - BASE (CB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS
G410 G2-07 DO YOU USE OR REFER TO EMITTER - COLLECTOR (EC)

RESISTANCE MEASUREMENTS
G411 G2-08 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE EMITTER - BASE JUNCTION
G412 G2-09 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE COLLECTOR - BASE JUNCTION
G413 G2-10 DO YOU USE OR REFER TO THE PHYSICAL SIZE OF THE TRANSISTOR STRUCTURE (COLLECTOR, BASE AND EMITTER)
G414 G2-11 DO YOU USE OR REFER TO LEAKAGE CURRENT (ICBO) IN A TRANSISTOR
G415 G2-12 DO YOU USE OR REFER TO TRANSISTOR SCHEMATIC SYMBOLS
G416 G2-13 DO YOU USE OR REFER TO TRANSISTOR NOTATION SUCH AS Q1, Q2, Q3, ETC
G417 G2-14 DO YOU USE OR REFER TO TRANSISTOR SUBSTITUTION INFORMATION
G418 G2-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE TRANSISTOR BASE CURRENT IB IS NORMALLY SIGNIFICANTLY SMALLER THAN THE EMITTER CURRENT IE (USUALLY IB BEING 2 TO 8 PERCENT OF IE)
G419 G2-16 DO YOU USE THE INFORMATION THAT THE EFFECT OF EMITTER BASE VOLTAGE ON BASE CURRENT IS THE CONTROLLING FACTOR FOR TRANSISTORS
G420 G2-17 DO YOU USE THE GENERAL RULE THAT LEAKAGE CURRENT (ICBO) IN A TRANSISTOR INCREASES AS TEMPERATURE INCREASES
G421 G2-18 DO YOU USE OR REFER TO TRANSISTOR CHARACTERISTIC CURVES
G422 G2-19 DO YOU USE OR REFER TO BETA TRANSISTOR GAINS
G423 G2-20 DO YOU USE OR REFER TO ALPHA TRANSISTOR GAINS
G424 G2-21 DO YOU USE OR REFER TO GAMMA TRANSISTOR GAINS
G425 G2-22 DO YOU CALCULATE BETA TRANSISTOR GAINS
G426 G2-23 DO YOU CALCULATE ALPHA TRANSISTOR GAINS
G427 G2-24 DO YOU CALCULATE GAMMA TRANSISTOR GAINS
G428 G3-01 DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR PRESENT JOB
G429 G3-02 DO YOU INSPECT TRANSISTOR AMPLIFIERS
G430 G3-03 DO YOU ALIGN OR ADJUST TRANSISTOR AMPLIFIERS
G431 G3-04 DO YOU TROUBLESHOOT TO THE AMPLIFIER CIRCUIT LEVEL
G432 G3-05 DO YOU TROUBLESHOOT TO AMPLIFIER COMPONENTS
G433 G3-06 DO YOU REMOVE OR REPLACE THE COMPLETE AMPLIFIER
G434 G3-07 DO YOU REMOVE OR REPLACE AMPLIFIER COMPONENTS
G435 G3-08 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A CHANGE IN BASE CURRENT
G436 G3-09 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A SPECIFIC CHANGE IN BASE CURRENT
G437 G3-10 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A CHANGE IN BASE CURRENT
G438 G3-11 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A SPECIFIC CHANGE IN BASE CURRENT
G439 G3-12 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN BASE CURRENT WHICH RESULTS FROM AN INPUT SIGNAL
G440 G3-13 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN BASE CURRENT WHICH RESULTS FROM A SPECIFIC INPUT SIGNAL
G441 G3-14 DO YOU USE THE LOAD-LINE METHOD OF ANALYSIS IN YOUR CIRCUIT ANALYSIS (THIS METHOD REQUIRES YOU TO PLOT A LOAD-LINE ON A TRANSISTOR CHARACTERISTIC CURVE)
G442 G3-15 DO YOU USE OR REFER TO THE OPERATING POINT Q (QUIESCENT POINT) FOR A TRANSISTOR
G443 G3-16 DO YOU CALCULATE THE SPECIFIC QUIESCENT POINT FOR A PARTICULAR TRANSISTOR
G444 G3-17 DO YOU MEASURE VOLTAGE GAIN USED IN THE COMMON EMITTER CONFIGURATION
G445 G3-18 DO YOU MEASURE CURRENT GAIN USED IN THE COMMON EMITTER CONFIGURATION
G446 G3-19 DO YOU MEASURE POWER GAIN USED IN THE COMMON EMITTER CONFIGURATION
G447 G3-20 DO YOU CALCULATE THE VOLTAGE GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE IN BASE-EMITTER VOLTAGE INTO THE CHANGE THE BASE COLLECTOR VOLTAGE TO DETERMINE THE VOLTAGE GAIN
G448 G3-21 DO YOU CALCULATE THE CURRENT GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE IN BASE CURRENT INTO THE CHANGE IN COLLECTOR CURRENT TO DETERMINE THE CURRENT GAIN
G449 G3-22 DO YOU CALCULATE THE POWER GAIN FOR A SPECIFIC TRANSISTOR USING A FORMULA THAT IS, DO YOU MULTIPLY THE CURRENT GAIN TIMES THE VOLTAGE GAIN TO DETERMINE THE POWER GAIN
G450 G3-23 DO YOU NEED TO KNOW THAT MORE COLLECTOR CURRENT IS GENERATED WITH LESS COLLECTOR VOLTAGE AS TEMPERATURE INCREASES (THIS AFFECTS THE STATIC OPERATING POINT [Q] OF THE TRANSISTOR)
G451 G3-24 DO YOU COMPUTE THE STATIC OPERATING POINT [Q] OF A TRANSISTOR AT DIFFERENT TEMPERATURES
G452 G3-25 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH EMITTER (SWAMPING) RESISTOR STABILIZATION
G453 G3-26 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH SELF-BIAS STABILIZATION
G454 G3-27 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH THERMISTOR STABILIZATION
G455 G3-28 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH FORWARD BIAS DIODE STABILIZATION
G456 G3-29 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH REVERSE BIAS DIODE STABILIZATION

G457 G3-30 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH DOUBLE DIODE STABILIZATION
G458 G3-31 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM EMITTER (SWAMPING) RESISTOR STABILIZATION
G459 G3-32 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM SELF-BIAS STABILIZATION
G460 G3-33 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THERMISTOR STABILIZATION
G461 G3-34 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM FORWARD BIAS DIODE STABILIZATION
G462 G3-35 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM REVERSE BIAS DIODE STABILIZATION
G463 G3-36 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM DOUBLE DIODE STABILIZATION
G464 G3-37 DO YOU IDENTIFY AMPLITUDE DISTORTION FOR TRANSISTOR CIRCUITS
G465 G3-38 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF AMPLITUDE DISTORTION
G466 G3-39 DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS
G467 G3-40 DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS
G468 G3-41 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF PHASE DISTORTION
G469 G3-42 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF FREQUENCY DISTORTION
G470 G3-43 DO YOU NEED TO KNOW THE DEGENERATIVE EFFECTS ON THE CIRCUIT CAUSED BY CHANGING EMITTER RESISTANCE FOR TRANSISTOR AMPLIFIERS IN THE COMMON COLLECTOR CONFIGURATION
G471 G3-44 DO YOU DETERMINE THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS
G472 G3-45 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS
G473 G3-46 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS
G474 G3-47 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY CIRCUITS
G475 G3-48 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS
G476 G3-49 DO YOU TROUBLESHOOT OR RE-AIR CASCADE-CONNECTED AMPLIFIERS

H SOLID STATE SPECIAL PURPOSE DEVICES, POWER SUPPLIES, AND OSCILLATORS

H477 H1-01 DO YOU USE OR REFER TO VARACTORS
H478 H1-02 DO YOU USE OR REFER TO TUNNEL DIODES
H479 H1-03 DO YOU USE OR REFER TO FIELD EFFECT TRANSISTORS (FET)
H480 H1-04 DO YOU USE OR REFER TO UNIJUNCTION TRANSISTORS
H481 H1-05 DO YOU USE OR REFER TO ZENER DIODES
H482 H1-06 DO YOU USE OR REFER TO INTEGRATED CIRCUITS
H483 H2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH POWER SUPPLIES
H484 H2-02 DO YOU INSPECT POWER SUPPLIES
H485 H2-03 DO YOU CLEAN POWER SUPPLIES
H486 H2-04 DO YOU ALIGN OR ADJUST POWER SUPPLIES
H487 H2-05 DO YOU TROUBLESHOOT TO POWER SUPPLY CIRCUIT LEVEL
H488 H2-06 DO YOU TROUBLESHOOT TO POWER SUPPLY COMPONENTS
H489 H2-07 DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES
H490 H2-08 DO YOU REMOVE OR REPLACE POWER SUPPLY COMPONENTS
H491 H2-09 DO YOU WORK WITH HALF-WAVE RECTIFIERS
H492 H2-10 DO YOU WORK WITH FULL-WAVE RECTIFIERS OTHER THAN BRIDGE RECTIFIERS
H493 H2-11 DO YOU WORK WITH BRIDGE RECTIFIERS
H494 H2-12 DO YOU WORK WITH THREE-PHASE RECTIFIERS
H495 H2-13 DO YOU USE OR REFER TO INPUT VOLTAGE
H496 H2-14 DO YOU USE OR REFER TO INPUT FREQUENCY
H497 H2-15 DO YOU USE OR REFER TO PEAK OUTPUT VOLTAGE
H498 H2-16 DO YOU USE OR REFER TO AVERAGE OUTPUT VOLTAGE
H499 H2-17 DO YOU USE OR REFER TO RIPPLE AMPLITUDE
H500 H2-18 DO YOU USE OR REFER TO RIPPLE FREQUENCY
H501 H2-19 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE
H502 H2-20 DO YOU USE OR REFER TO SHAPE OF OUTPUT WAVEFORMS
H503 H2-21 DO YOU USE OR REFER TO EFFECTIVE OUTPUT VOLTAGE
H504 H2-22 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE FILTERS
H505 H2-23 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE FILTERS
H506 H2-24 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE INPUT L-TYPE FILTERS
H507 H2-25 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE INPUT L-TYPE FILTERS
H508 H2-26 DO YOU WORK WITH CIRCUITS WHICH EMPLOY LC PI-TYPE FILTERS
H509 H2-27 DO YOU WORK WITH CIRCUITS WHICH EMPLOY RC PI-TYPE FILTERS
H510 H2-28 DO YOU WORK WITH CIRCUITS WHICH EMPLOY DON'T REMEMBER WHICH TYPE OF FILTER
H511 H2-29 DO YOU HAVE THE OPTION OF REPLACING ONE TYPE OF FILTER WITH A DIFFERENT TYPE FILTER
H512 H3-01 DO YOU WORK WITH OSCILLATORS IN YOUR PRESENT JOB
H513 H3-02 DO YOU INSPECT OSCILLATORS
H514 H3-03 DO YOU ALIGN OR ADJUST OSCILLATORS
H515 H3-04 DO YOU REMOVE OR REPLACE COMPLETE OSCILLATORS
H516 H3-05 DO YOU REMOVE OR REPLACE OSCILLATOR COMPONENTS
H517 H3-06 DO YOU TROUBLESHOOT TO OSCILLATOR CIRCUIT LEVEL
H518 H3-07 DO YOU TROUBLESHOOT TO OSCILLATOR COMPONENTS
H519 H3-08 DO YOU USE OR REFER TO FEEDBACK
H520 H3-09 DO YOU USE OR REFER TO FREQUENCY DETERMINING DEVICES (FDD)
H521 H3-10 DO YOU USE OR REFER TO AMPLITUDE STABILITY
H522 H3-11 DO YOU USE OR REFER TO FREQUENCY STABILITY
H523 H3-12 DO YOU USE OR REFER TO DAMPING
H524 H3-13 DO YOU USE OR REFER TO REGENERATIVE FEEDBACK
H525 H3-14 DO YOU USE OR REFER TO PIEZOELECTRIC EFFECT

H526 H3-15 DO YOU USE OR REFER TO CRITICAL DAMPING
H527 H3-16 DO YOU USE OR REFER TO UNDER DAMPING
H528 H3-17 DO YOU USE OR REFER TO OVER DAMPING
H529 H3-18 DO YOU WORK WITH OSCILLATORS WHICH USE LC TANK CIRCUITS AS FDD
H530 H3-19 DO YOU WORK WITH OSCILLATORS WHICH USE RC NETWORKS AS FDD
H531 H3-20 DO YOU WORK WITH OSCILLATORS WHICH USE CRYSTALS AS FDD
H532 H3-21 DO YOU WORK WITH OSCILLATORS WHICH USE DON'T REMEMBER WHICH TYPE OF FDD
H533 H3-22 DO YOU WORK WITH SERIES HARTLEY SINUSOIDAL OSCILLATORS
H534 H3-23 DO YOU WORK WITH SHUNT HARTLEY SINUSOIDAL OSCILLATORS
H535 H3-24 DO YOU WORK WITH COLPITTS SINUSOIDAL OSCILLATORS
H536 H3-25 DO YOU WORK WITH CLAPP SINUSOIDAL OSCILLATORS
H537 H3-26 DO YOU WORK WITH BUTLER SINUSOIDAL OSCILLATORS
H538 H3-27 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF OSCILLATORS

I MULTIVIBRATORS, LIMITERS, CLAMPERS, AND ELECTRON TUBES

1539 I1-01 DO YOU WORK WITH MULTIVIBRATORS IN YOUR PRESENT JOB
1540 I1-02 DO YOU INSPECT WAVE GENERATING OR SHAPING CIRCUITS
1541 I1-03 DO YOU ALIGN OR ADJUST WAVE GENERATING OR SHAPING CIRCUITS
1542 I1-04 DO YOU CALIBRATE WAVE GENERATING OR SHAPING CIRCUITS
1543 I1-05 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUITS
1544 I1-06 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUIT COMPONENTS
1545 I1-07 DO YOU REMOVE OR REPLACE COMPLETE WAVE GENERATING OR SHAPING CIRCUITS
1546 I1-08 DO YOU REMOVE OR REPLACE WAVE GENERATING OR SHAPING COMPONENTS
1547 I1-09 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK CIRCUITS
1548 I1-10 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN RC NETWORKS
1549 I1-11 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN CRYSTALS
1550 I1-12 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN DON'T REMEMBER WHICH TYPE OF FDD
1551 I1-13 DO YOU WORK WITH ASTABLE MULTIVIBRATORS
1552 I1-14 DO YOU WORK WITH MONOSTABLE MULTIVIBRATORS
1553 I1-15 DO YOU WORK WITH BISTABLE MULTIVIBRATORS
1554 I1-16 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE MULTIVIBRATORS
1555 I2-01 DO YOU WORK WITH LIMITERS OR CLAMPERS IN YOUR PRESENT JOB
1556 I2-02 DO YOU WORK WITH SERIES DIODE LIMITERS
1557 I2-03 DO YOU WORK WITH SHUNT DIODE LIMITERS
1558 I2-04 DO YOU WORK WITH LIMITERS WITH BIAS
1559 I2-05 DO YOU WORK WITH ZENER DIODE LIMITERS
1560 I2-06 DO YOU WORK WITH TRANSISTOR LIMITERS
1561 I2-07 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF LIMITERS
1562 I2-08 DO YOU WORK WITH BASIC DIODE CLAMPING CIRCUITS
1563 I2-09 DO YOU WORK WITH DIODE CLAMPING CIRCUITS WITH BIAS
1564 I2-10 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF CLAMPING CIRCUIT
1565 I3-01 IN YOUR PRESENT JOB, DO YOU WORK ON EQUIPMENT WHICH CONTAINS ELECTRON TUBES
1566 I3-02 DO YOU CHECK ELECTRON TUBES TO SEE IF THEY ARE GOOD
1567 I3-03 DO YOU USE TUBE TESTERS TO CHECK ELECTRON TUBES
1568 I3-04 DO YOU USE MULTIMETERS TO CHECK ELECTRON TUBES
1569 I3-05 DO YOU USE SCOPES TO CHECK ELECTRON TUBES
1570 I3-06 DO YOU USE SUBSTITUTION TO CHECK ELECTRON TUBES
1571 I3-07 DO YOU USE OR REFER TO CUTOFF
1572 I3-08 DO YOU USE OR REFER TO PEAK INVERSE VOLTAGE RATING
1573 I3-09 DO YOU USE OR REFER TO PEAK CURRENT RATING
1574 I3-10 DO YOU USE OR REFER TO TRANSIT TIME
1575 I3-11 DO YOU USE OR REFER TO PLATE DISSIPATION RATING
1576 I3-12 DO YOU USE OR REFER TO SATURATION
1577 I3-13 DO YOU USE OR REFER TO DC PLATE RESISTANCE
1578 I3-14 DO YOU COMPUTE ACTUAL VALUES OF THE DC PLATE RESISTANCE FOR ELECTRON TUBES
1579 I3-15 DO YOU USE OR REFER TO PLATE VOLTAGE
1580 I3-16 DO YOU USE OR REFER TO PLATE CURRENT
1581 I3-17 DO YOU USE OR REFER TO GRID VOLTAGE
1582 I3-18 DO YOU USE OR REFER TO GRID CURRENT
1583 I3-19 DO YOU USE OR REFER TO CATHODE VOLTAGE
1584 I3-20 DO YOU USE OR REFER TO CATHODE CURRENT
1585 I3-21 DO YOU USE OR REFER TO THE TRIODE AMPLIFICATION FACTOR (THE AMPLIFICATION FACTOR FOR TRIODES IS DEFINED AS THE RATIO OF CHANGE IN PLATE VOLTAGE TO A CHANGE IN GRID VOLTAGE)
1586 I3-22 DO YOU CALCULATE ACTUAL VALUES OF TRIODE AMPLIFICATION FACTORS
1587 I3-23 DO YOU USE OR REFER TO MULTIGRID (TETRODE, PENTODE, ETC) AMPLIFICATION FACTORS
1588 I3-24 DO YOU USE OR REFER TO ELECTRON TUBE TRANSCONDUCTANCE (G, WHICH IS MEASURED IN MHOS)
1589 I3-25 DO YOU CALCULATE ACTUAL VALUES OF ELECTRON TUBE TRANSCONDUCTANCES
1590 I3-26 DO YOU USE OR REFER TO THE ELECTRON TUBE PARAMETER CALLED AC PLATE RESISTANCE
1591 I3-27 DO YOU CALCULATE ACTUAL VALUES OF AC PLATE RESISTANCE
1592 I3-28 DO YOU USE OR REFER TO ELECTRON TUBE INTERELECTRODE CAPACITANCE
1593 I3-29 DO YOU USE OR REFER TO CHARACTERISTIC CURVES IN YOUR WORK WITH ELECTRON TUBES
1594 I3-30 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE VOLTAGE FOR A SPECIFIED BIAS

1595 I3-31 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE CURRENT FOR A SPECIFIED BIAS
1596 I3-32 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR CUTOFF
1597 I3-33 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR SATURATION
1598 I3-34 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER GAIN
1599 I3-35 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER EFFICIENCY
1600 I3-36 DO YOU USE TEST TUBE CHECKERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN
1601 I3-37 DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN
1602 I3-38 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN
1603 I3-39 DO YOU USE CHARACTERISTIC CURVES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN
1604 I3-40 DO YOU CALCULATE ANY ELECTRON TUBE CAPACITANCES SUCH AS INPUT CAPACITANCE
1605 I3-41 DO YOU USE OR REFER TO TUBE SOCKET NOTATION
1606 I3-42 DO YOU USE OR REFER TO PIN NUMBERING SYSTEMS
1607 I3-43 DO YOU USE OR REFER TO THE TYPE OF MATERIAL OR THE OPERATING TEMPERATURE OF THE EMITTING SURFACE IN THE ELECTRON TUBES YOU WORK ON
1608 I3-44 DO YOU USE OR REFER TO TUBE SUBSTITUTION MATERIAL SUCH AS MANUALS OR CHARTS

J ELECTRON TUBE AMPLIFIERS AND CIRCUITS, SPECIAL PURPOSE ELECTRON TUBES, HETERODYNING, MODULATION,

J609 J1-01 DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS IN YOUR PRESENT JOB
J610 J1-02 DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS
J611 J1-03 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS
J612 J1-04 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS
J613 J1-05 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS
J614 J1-06 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS
J615 J1-07 DO YOU TROUBLESHOOT OR REPAIR DON'T KNOW WHICH TYPE OF AMPLIFIER
J616 J2-01 DO YOU WORK WITH GAS TUBES (HOT CATHODE OR COLD CATHODE)
J617 J2-02 DO YOU WORK WITH CATHODE-RAY TUBES
J618 J2-03 DO YOU USE OR REFER TO THE CHARACTERISTICS OF BEAM POWER TUBES
J619 J2-04 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH BEAM POWER TUBES ARE USED
J620 J2-05 DO YOU USE OR REFER TO THE CHARACTERISTICS OF THYRATRONS
J621 J2-06 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH THYRATRONS ARE USED
J622 J2-07 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTRON GUNS OF CATHODE-RAY TUBES (CRT)
J623 J2-08 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROMAGNETIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)
J624 J2-09 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)
J625 J2-10 DO YOU USE OR REFER TO PHOSPHOR SCREENS
J626 J2-11 DO YOU USE OR REFER TO AQUADAG COATINGS
J627 J2-12 DO YOU USE OR REFER TO ELECTRON OPTICS
J628 J2-13 DO YOU USE OR REFER TO PERSISTENCE
J629 J2-14 DO YOU USE OR REFER TO DECAY TIMES
J630 J2-15 DO YOU USE OR REFER TO FLUORESCENCE
J631 J2-16 DO YOU USE OR REFER TO PHOSPHORESCENCE
J632 J3-01 DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB
J633 J3-02 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS
J634 J3-03 DO YOU PERFORM TASKS ON FREQUENCY MIXERS
J635 J3-04 DO YOU USE OR REFER TO THE HETERODYNING OF SIGNALS IN YOUR WORK WITH TRANSMIT OR RECEIVE SYSTEMS
J636 J3-05 DO YOU PERFORM TASKS ON REACTANCE MODULATORS
J637 J3-06 DO YOU PERFORM TASKS ON MODULATED OSCILLATORS

K AM SYSTEMS, FM SYSTEMS, AND NUMBERING SYSTEMS

K638 K1-01 DO YOU WORK ON AM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB
K639 K1-02 DO YOU INSPECT AM TRANSMIT OR RECEIVE SYSTEMS
K640 K1-03 DO YOU CLEAN AM TRANSMIT OR RECEIVE SYSTEMS
K641 K1-04 DO YOU ALIGN OR ADJUST AM TRANSMIT OR RECEIVE SYSTEMS
K642 K1-05 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE SYSTEMS
K643 K1-06 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE COMPONENTS
K644 K1-07 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE SYSTEMS
K645 K1-08 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE COMPONENTS
K646 K1-09 DO YOU PERFORM TASKS ON RF OSCILLATORS
K647 K1-10 DO YOU PERFORM TASKS ON RF AMPLIFIERS
K648 K1-11 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS
K649 K1-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS
K650 K1-13 DO YOU PERFORM TASKS ON LOCAL OSCILLATORS
K651 K1-14 DO YOU PERFORM TASKS ON IF AMPLIFIERS
K652 K1-15 DO YOU PERFORM TASKS ON DETECTORS
K653 K1-16 DO YOU PERFORM TASKS ON DON'T REMEMBER WHICH AM STAGE
K654 K1-17 DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN TRANSMITTERS
K655 K1-18 DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN TRANSMITTERS

K656 K1-19 DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS
K657 K1-20 DO YOU USE OR REFER TO SELECTIVITY OF RECEIVERS
K658 K1-21 DO YOU USE OR REFER TO 2ND HARMONIC DISTORTION
K659 K1-22 DO YOU USE OR REFER TO BANDPASS DISTORTION
K660 K1-23 DO YOU USE OR REFER TO SQUARE LAW DISTORTION
K661 K1-24 DO YOU USE OR REFER TO CO-CHANNEL INTERFERENCE
K662 K1-25 DO YOU USE OR REFER TO IMAGE FREQUENCIES IN RECEIVERS
K663 K1-26 DO YOU USE OR REFER TO SIGNAL TO IMAGE RATIOS OR IMAGE REJECTION RATIOS
K664 K1-27 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AN TRANSMITTER SCHEMATIC DIAGRAMS
K665 K1-28 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AN RECEIVER SCHEMATIC DIAGRAMS
K666 K2-01 DO YOU WORK WITH FM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB
K667 K2-02 DO YOU INSPECT FM TRANSMIT OR RECEIVE SYSTEMS
K668 K2-03 DO YOU CLEAN FM TRANSMIT OR RECEIVE SYSTEMS
K669 K2-04 DO YOU ALIGN FM TRANSMIT OR RECEIVE SYSTEMS
K670 K2-05 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE SYSTEMS
K671 K2-06 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE COMPONENTS
K672 K2-07 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE SYSTEMS
K673 K2-08 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE COMPONENTS
K674 K2-09 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS
K675 K2-10 DO YOU PERFORM TASKS ON FREQUENCY MULTIPLIERS
K676 K2-11 DO YOU PERFORM TASKS ON DRIVERS (INTERMEDIATE AMPLIFIERS)
K677 K2-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS
K678 K2-13 DO YOU PERFORM TASKS ON RF AMPLIFIERS
K679 K2-14 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS
K680 K2-15 DO YOU PERFORM TASKS ON IF AMPLIFIERS
K681 K2-16 DO YOU PERFORM TASKS ON LIMITERS
K682 K2-17 DO YOU PERFORM TASKS ON FREQUENCY DISCRIMINATORS
K683 K2-18 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSMITTERS
K684 K2-19 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM RECEIVERS
K685 K3-01 DO YOU CONVERT DECIMAL (BASE 10) NUMBERS TO OCTAL (BASE 8) NUMBERS
K686 K3-02 DO YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2) NUMBERS
K687 K3-03 DO YOU CONVERT OCTAL NUMBERS TO DECIMAL NUMBERS
K688 K3-04 DO YOU CONVERT OCTAL NUMBERS TO BINARY NUMBERS
K689 K3-05 DO YOU CONVERT BINARY NUMBERS TO DECIMAL NUMBERS
K690 K3-06 DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS
K691 K3-07 DO YOU ADD BINARY NUMBERS TO GET A SUM
K692 K3-08 DO YOU SUBTRACT BINARY NUMBERS USING THE END-AROUND-CARRY METHOD
K693 K3-09 DO YOU SUBTRACT BINARY NUMBERS USING THE DIRECT SUBTRACTION METHOD
K694 K3-10 DO YOU ADD OCTAL NUMBERS TO GET A SUM

L LOGIC FUNCTIONS, BOOLEAN EQUATIONS, AND COUNTERS

L695 L1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO LOGIC FUNCTIONS
L696 L1-02 DO YOU CONSTRUCT TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES
L697 L1-03 DO YOU CONSTRUCT TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES
L698 L1-04 DO YOU CONSTRUCT TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS
L699 L1-05 DO YOU CONSTRUCT TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS OR GATES
L700 L1-06 DO YOU USE OR REFER TO TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES
L701 K1-07 DO YOU USE OR REFER TO TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES
L702 K1-08 DO YOU USE OR REFER TO TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS
L703 L1-09 DO YOU USE OR REFER TO TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS
L704 L1-10 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR AND GATES
L705 L1-11 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR OR GATES
L706 L1-12 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR NAND OR NOR GATES
L707 L1-13 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR EXCLUSIVE OR GATES
L708 L2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO BOOLEAN EQUATIONS, LOGIC DIAGRAMS, OR LOGIC CIRCUITS
L709 L2-02 DO YOU DRAW LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUITS
L710 L2-03 DO YOU CONSTRUCT TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS
L711 L2-04 DO YOU DRAW LOGIC DIAGRAMS FROM GIVEN BOOLEAN EQUATIONS
L712 L2-05 DO YOU MEASURE INPUTS OR OUTPUTS OF LOGIC GATES
L713 L2-06 DO YOU DEVELOP OR ANALYZE BOOLEAN EQUATIONS IN THE PROCESS OF TROUBLESHOOTING DIGITAL CIRCUITS
L714 L2-07 DO YOU ANALYZE LOGIC CIRCUITS BY USING BOOLEAN ALGEBRA
L715 L2-08 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUIT GATES
L716 L2-09 DO YOU USE OR REFER TO TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS
L717 L2-10 DO YOU USE OR REFER TO LOGIC DIAGRAMS CONSISTING OF MORE THAN ONE GATE
L718 L2-11 DO YOU COMPUTE SUM AND CARRY EXPRESSIONS FOR SERIAL HALF OR FULL ADDER LOGIC DIAGRAMS
L719 L2-12 DO YOU TRACE DATA FLOW THROUGH PARALLEL FULL ADDER

LOGIC DIAGRAMS
L720 L2-13 DO YOU WORK WITH ASTABLE (FREE RUNNING) MULTIVIBRATORS
L721 L2-14 DO YOU WORK WITH BISTABLE (FLIP-FLOP) MULTIVIBRATORS
L722 L2-15 DO YOU WORK WITH MONOSTABLE (ONE-SHOT) MULTIVIBRATORS
L723 L2-16 DO YOU USE OR REFER TO FLIP-FLOP MULTIVIBRATOR SYMBOLS
L724 L2-17 DO YOU USE OR REFER TO SINGLE-SHOT MULTIVIBRATOR SYMBOLS
L725 L2-18 DO YOU USE OR REFER TO FLIP-FLOP CIRCUIT DIAGRAMS
L726 L2-19 DO YOU USE OR REFER TO FLIP-FLOP TRUTH TABLES
L727 L2-20 DO YOU USE OR REFER TO COMPLEMENTED FLIP-FLOP LOGIC SYMBOLS
L728 L2-21 DO YOU USE OR REFER TO COMPLEMENTING FLIP-FLOP LOGIC SYMBOLS
L729 L2-22 DO YOU MEASURE OUTPUT WAVESHAPES OF LOGIC CIRCUITS
L730 L2-23 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTED FLIP-FLOP SCHEMATIC DIAGRAMS
L731 L2-24 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTING FLIP-FLOP SCHEMATIC DIAGRAMS
L732 L2-25 DO YOU CONSTRUCT TRUTH TABLES FOR J-K FLIP-FLOP LOGIC SYMBOLS
L733 L3-01 DO YOU WORK WITH DIGITAL COUNTERS IN YOUR PRESENT JOB
L734 L3-02 DO YOU USE OR REFER TO UP-COUNTERS
L735 L3-03 DO YOU USE OR REFER TO DOWN-COUNTERS
L736 L3-04 DO YOU USE OR REFER TO SERIAL COUNTERS
L737 L3-05 DO YOU USE OR REFER TO PARALLEL COUNTERS
L738 L3-06 DO YOU USE OR REFER TO RING COUNTERS
L739 L3-07 DO YOU USE OR REFER TO DECADE COUNTERS
L740 L3-08 DO YOU USE OR REFER TO COUNT DETECT CIRCUITS
L741 L3-09 DO YOU USE OR REFER TO DOWN CLOCKS
L742 L3-10 DO YOU USE OR REFER TO UP CLOCKS
L743 L3-11 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS
L744 L3-12 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-FLOPS
L745 L3-13 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF DECADE COUNTERS
L746 L3-14 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF RING COUNTERS
L747 L3-15 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER
L748 L3-16 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS
L749 L3-17 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF COUNTERS
L750 L3-18 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS
L751 L3-19 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-FLOPS
L752 L3-20 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTERS
L753 L3-21 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR OTHER TYPES OF COUNTERS
L754 L3-22 DO YOU CONSTRUCT TRUTH TABLES FROM LOGIC DIAGRAMS OF DECADE COUNTERS
L755 L3-23 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP IN RING COUNTERS FOR SPECIFIC INPUT PULSES
L756 L3-24 DO YOU DETERMINE THE APPROPRIATE AND GATE NECESSARY IN COUNT DETECT CIRCUITS TO INDICATE A REQUIRED COUNT

M TIMING CIRCUITS, USE OF SIGNAL GENERATORS, MOTORS, AND GENERATORS

M757 M1-01 DO YOU WORK WITH SAWTOOTH WAVE GENERATORS
M758 M1-02 DO YOU WORK WITH TRAPEZOIDAL WAVE GENERATORS
M759 M1-03 DO YOU WORK WITH PULSED OSCILLATORS WITH REGENERATIVE FEEDBACK
M760 M1-04 DO YOU WORK WITH PULSED OSCILLATORS WITHOUT REGENERATIVE FEEDBACK
M761 M1-05 DO YOU WORK WITH BLOCKING OSCILLATORS
M762 M1-06 DO YOU USE OR REFER TO RISE TIME
M763 M1-07 DO YOU USE OR REFER TO FALL OR FLYBACK TIME
M764 M1-08 DO YOU USE OR REFER TO SWEEP TIME
M765 M1-09 DO YOU USE OR REFER TO ELECTRICAL LENGTH OF SAWTOOTH WAVEFORMS
M766 M1-10 DO YOU USE OR REFER TO PHYSICAL LENGTH OF SAWTOOTH WAVEFORMS
M767 M1-11 DO YOU USE OR REFER TO LINEAR SLOPE OF SAWTOOTH WAVEFORMS
M768 M1-12 DO YOU USE OR REFER TO GATE LENGTH OF SAWTOOTH WAVEFORMS
M769 M2-01 DO YOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB
M770 M2-02 DO YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL GENERATORS
M771 M2-03 DO YOU PERFORM PERIODIC MAINTENANCE SUCH AS ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL GENERATORS
M772 M2-04 DO YOU TROUBLESHOOT TO AN ASSEMBLY OR SUBASSEMBLY WHILE USING SIGNAL GENERATORS
M773 M2-05 DO YOU TROUBLESHOOT TO THE SMALLEST REPLACEABLE COMPONENT WHILE USING SIGNAL GENERATORS
M774 M2-06 DO YOU USE AUDIO SINE-WAVE GENERATORS
M775 M2-07 DO YOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH AS SQUARE WAVE, TRIANGLE, PULSE, OR SPIKE
M776 M2-08 DO YOU USE RF GENERATORS LESS THAN 1,000 MH
M777 M2-09 DO YOU USE RF GENERATORS GREATER THAN 1,000 MH
M778 M2-10 DO YOU USE OTHER SPECIAL PURPOSE OR MULTI-FUNCTION GENERATORS
M779 M3-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING

WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS OR GENERATORS
M780 M3-02 DO YOU INSPECT MOTORS
M781 M3-03 DO YOU CLEAN OR LUBRICATE MOTORS
M782 M3-04 DO YOU OPERATE MOTORS
M783 M3-05 DO YOU REMOVE OR REPLACE COMPLETE MOTORS
M784 M3-06 DO YOU REMOVE OR REPLACE MOTOR PARTS
M785 M3-07 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF MOTORS
M786 M3-08 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS
M787 M3-09 DO YOU PERFORM ANY TASKS ON FIELD COILS
M788 M3-10 DO YOU PERFORM ANY TASKS ON ARMATURES
M789 M3-11 DO YOU PERFORM ANY TASKS ON ROTORS
M790 M3-12 DO YOU PERFORM ANY TASKS ON BRUSHES
M791 M3-13 DO YOU PERFORM ANY TASKS ON SLIP RINGS
M792 M3-14 DO YOU PERFORM ANY TASKS ON COMMUTATORS
M793 M3-15 DO YOU PERFORM ANY TASKS ON POLE PIECES
M794 M3-16 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OF THE FORCE OR TORQUE CREATED BY A MOTOR
M795 M3-17 DO YOU DETERMINE OR MEASURE THE DIRECTION OF THE MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR
M796 M3-18 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OR DIRECTION OF THE INDUCED VOLTAGE IN MOTORS
M797 M3-19 DO YOU WORK WITH SYNCHRONOUS MOTORS
M798 M3-20 DO YOU WORK WITH INDUCTION MOTORS
M799 M3-21 DO YOU WORK WITH SPLIT-PHASE MOTORS
M800 M3-22 DO YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS
M801 M3-23 DO YOU INSPECT GENERATORS
M802 M3-24 DO YOU CLEAN OR LUBRICATE GENERATORS
M803 M3-25 DO YOU OPERATE GENERATORS
M804 M3-26 DO YOU REMOVE OR REPLACE COMPLETE GENERATORS
M805 M3-27 DO YOU REMOVE OR REPLACE GENERATOR PARTS
M806 M3-28 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF GENERATORS
M807 M3-29 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF GENERATORS

N METER MOVEMENTS, SATURABLE REACTORS, MAGNETIC AMPLIFIERS, AND WAVESHAPING CIRCUITS

N808 N1-01 DO YOU WORK WITH METERS IN YOUR PRESENT JOB
N809 N1-02 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF PERMANENT MAGNETS
N810 N1-03 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF MOVING COILS
N811 N1-04 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF SPIRAL SPRINGS
N812 N1-05 DO YOU READ METER SCALES
N813 N1-06 DO YOU EXTEND THE RANGE OF AMMETERS
N814 N1-07 DO YOU ZERO OHMMETERS
N815 N1-08 DO YOU ZERO AMMETERS
N816 N1-09 DO YOU EXTEND THE RANGE OF VOLTMETERS
N817 N1-10 DO YOU USE OR REFER TO VOLTMETER SENSITIVITY (EXPRESSED IN UNITS OF OHMS PER VOLT)
N818 N2-01 DO YOU WORK WITH SATURABLE REACTORS OR MAGNETIC AMPLIFIERS IN YOUR PRESENT JOB
N819 N2-02 DO YOU INSPECT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS
N820 N2-03 DO YOU CLEAN MAGNETIC AMPLIFIERS OR SATURABLE REACTORS
N821 N2-04 DO YOU ADJUST MAGNETIC AMPLIFIERS OR SATURABLE REACTORS
N822 N2-05 DO YOU TROUBLESHOOT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS
N823 N2-06 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIERS OR SATURABLE REACTORS
N824 N2-07 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIER OR SATURABLE REACTOR COMPONENTS
N825 N2-08 DO YOU USE OR REFER TO HYSTERESIS CURVES OR LOOPS
N826 N2-09 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE REACTORS
N827 N2-10 DO YOU MEASURE OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE REACTORS
N828 N2-11 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS FOR MAGNETIC AMPLIFIERS
N829 N2-12 DO YOU USE OR REFER TO COERCIVE FORCE IN SATURABLE REACTORS
N830 N2-13 DO YOU USE OR REFER TO RESIDUAL MAGNETISM IN SATURABLE REACTORS
N831 N2-14 DO YOU USE OR REFER TO FLUX DENSITY IN SATURABLE REACTORS
N832 N2-15 DO YOU USE OR REFER TO POINT OF SATURATION IN SATURABLE REACTORS
N833 N2-16 DO YOU USE OR REFER TO SATURABLE REACTOR SCHEMATIC SYMBOLS
N834 N3-01 DO YOU WORK WITH WAVESHAPING CIRCUITS IN YOUR PRESENT JOB
N835 N3-02 DO YOU USE OR REFER TO TRANSIENT INTERVALS
N836 N3-03 DO YOU USE OR REFER TO PULSE WIDTH (PW)
N837 N3-04 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)
N838 N3-05 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)
N839 N3-06 DO YOU USE OR REFER TO DIFFERENTIATING CIRCUITS
N840 N3-07 DO YOU USE OR REFER TO INTEGRATING CIRCUITS
N841 N3-08 DO YOU USE OR REFER TO THE CLASSIFICATION OF TIME CONSTANTS (TC) AS LONG, MEDIUM, OR SHORT
N842 N3-09 DO YOU DETERMINE WHETHER AN LR OR RC CIRCUIT IS DIFFERENTIATING OR INTEGRATING BASED ON THE TIME CONSTANT AND OUTPUT CONFIGURATION
N843 N3-10 DO YOU WORK WITH SQUARE WAVE GENERATORS
N844 N3-11 DO YOU WORK WITH RECTANGULAR WAVE GENERATORS

0 SINGLE SIDEBAND SYSTEMS, PULSE MODULATION SYSTEMS, AND ANTENNAS

0845 01-01 DO YOU WORK ON SINGLE SIDEBAND SYSTEMS IN YOUR PRESENT JOB
0846 01-02 DO YOU INSPECT SSB TRANSMIT OR RECEIVE SYSTEMS
0847 01-03 DO YOU CLEAN SSB TRANSMIT OR RECEIVE SYSTEMS
0848 01-04 DO YOU ALIGN SSB TRANSMIT OR RECEIVE SYSTEMS
0849 01-05 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE SYSTEMS
0850 01-06 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE COMPONENTS
0851 01-07 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE SYSTEMS
0852 01-08 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE COMPONENTS
0853 01-09 DO YOU PERFORM TASKS ON SSB AUDIO AMPLIFIERS
0854 01-10 DO YOU PERFORM TASKS ON SSB BALANCED MODULATORS
0855 01-11 DO YOU PERFORM TASKS ON SSB CARRIER OSCILLATORS
0856 01-12 DO YOU PERFORM TASKS ON SSB LC FILTERS
0857 01-13 DO YOU PERFORM TASKS ON SSB CRYSTAL FILTERS
0858 01-14 DO YOU PERFORM TASKS ON SSB MECHANICAL FILTERS
0859 01-15 DO YOU PERFORM TASKS ON SSB OSCILLATORS
0860 01-16 DO YOU PERFORM TASKS ON SSB MIXERS
0861 01-17 DO YOU PERFORM TASKS ON SSB DRIVERS
0862 01-18 DO YOU PERFORM TASKS ON SSB POWER AMPLIFIERS
0863 01-19 DO YOU PERFORM TASKS ON SSB RF AMPLIFIERS
0864 01-20 DO YOU PERFORM TASKS ON SSB FREQUENCY CONVERTERS
0865 01-21 DO YOU PERFORM TASKS ON SSB IF AMPLIFIERS
0866 01-22 DO YOU PERFORM TASKS ON SSB DEMODULATORS
0867 01-23 DO YOU PERFORM TASKS ON SSB DON'T REMEMBER WHICH SSB SYSTEM STAGES
0868 01-24 DO YOU USE OR REFER TO SELECTIVE FADING
0869 01-25 DO YOU USE OR REFER TO PEAK POWER
0870 01-26 DO YOU USE OR REFER TO FREQUENCY STABILITY
0871 01-27 DO YOU USE OR REFER TO RESPONSE CURVES FOR BANDWIDTH FILTERS
0872 01-28 DO YOU CALCULATE PEAK POWER OR EFFECTIVE POWER OF SSB TRANSMITTERS
0873 01-29 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB TRANSMITTER SCHEMATIC DIAGRAMS
0874 01-30 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB RECEIVER SCHEMATIC DIAGRAMS
0875 02-01 DO YOU WORK ON PULSE MODULATION SYSTEMS IN YOUR PRESENT JOB
0876 02-02 DO YOU INSPECT PULSE MODULATION SYSTEMS
0877 02-03 DO YOU CLEAN PULSE MODULATION SYSTEMS
0878 02-04 DO YOU ALIGN PULSE MODULATION SYSTEMS
0879 02-05 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS
0880 02-06 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEM COMPONENTS
0881 02-07 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS
0882 02-08 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEM COMPONENTS
0883 02-09 DO YOU WORK ON PULSE-AMPLITUDE MODULATION (PAM) SYSTEMS
0884 02-10 DO YOU WORK ON PULSE-DURATION MODULATION (PDM) SYSTEMS
0885 02-11 DO YOU WORK ON PULSE-POSITION MODULATION (PPM) SYSTEMS
0886 02-12 DO YOU WORK ON PULSE-CODE MODULATION (PCM) SYSTEMS
0887 02-13 DO YOU WORK ON LINE PULSING MODULATION SYSTEMS
0888 02-14 DO YOU WORK ON DON'T REMEMBER WHICH TYPE OF MODULATION SYSTEM
0889 02-15 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER SUPPLIES
0890 02-16 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM CHARGING CHOKES AND CHARGING DIODES
0891 02-17 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE FORMING NETWORKS
0892 02-18 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TIMERS
0893 02-19 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM SWITCHES SUCH AS GAS THYRATRONS
0894 02-20 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE TRANSFORMERS
0895 02-21 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TRANSMITTER TUBES
0896 02-22 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM RF AMPLIFIERS
0897 02-23 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM FREQUENCY CONVERTERS
0898 02-24 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM IF AMPLIFIERS
0899 02-25 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DETECTORS
0900 02-26 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM VIDEO AMPLIFIERS
0901 02-27 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER VIDEO AMPLIFIERS
0902 02-28 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DON'T REMEMBER WHICH PULSE MODULATION SYSTEM STAGES
0903 02-29 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)
0904 02-30 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)
0905 02-31 DO YOU USE OR REFER TO PULSE WIDTH (PW)
0906 02-32 DO YOU USE OR REFER TO PULSE SHAPE
0907 02-33 DO YOU USE OR REFER TO PEAK POWER
0908 02-34 DO YOU USE OR REFER TO AVERAGE POWER
0909 02-35 DO YOU CALCULATE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)
0910 02-36 DO YOU MEASURE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)

0911 02-37 DO YOU USE FORMULAS TO CALCULATE AVERAGE POWER OR PEAK POWER OF PULSE MODULATION TRANSMIT SYSTEMS
0912 02-38 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION TRANSMITTER SCHEMATIC DIAGRAMS
0913 02-39 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION RECEIVER SCHEMATIC DIAGRAMS
0914 03-01 DO YOU WORK WITH ANTENNAS IN YOUR PRESENT JOB
0915 03-02 DO YOU INSPECT ANTENNAS
0916 03-03 DO YOU CLEAN ANTENNAS
0917 03-04 DO YOU PHYSICALLY ALIGN ANTENNAS
0918 03-05 DO YOU ELECTRICALLY ALIGN ANTENNAS
0919 03-06 DO YOU TROUBLESHOOT TO ANTENNAS
0920 03-07 DO YOU TROUBLESHOOT TO ANTENNA COMPONENTS
0921 03-08 DO YOU REMOVE OR INSTALL ANTENNAS
0922 03-09 DO YOU REMOVE OR REPLACE COMPONENTS OF ANTENNAS
0923 03-10 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF E OR ELECTRIC FIELD LINES
0924 03-11 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF H OR MAGNETIC FIELD LINES
0925 03-12 DO YOU DETERMINE THE DIRECTION OF THE MAGNETIC LINES IN RELATION TO THE ELECTRIC LINES OF FORCE FOR ANTENNAS
0926 03-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE OF CORRECT LENGTH (HALF-WAVE) ACT AS INDUCTIVE LOADS TO THE GENERATOR
0927 03-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE LONGER THAN A HALF-WAVE ACT AS INDUCTIVE LOADS TO THE GENERATOR
0928 03-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE SHORTER THAN A HALF-WAVE ACT AS CAPACITIVE LOADS TO THE GENERATOR
0929 03-16 DO YOU WORK WITH HERTZ ANTENNAS
0930 03-17 DO YOU WORK WITH MARCONI ANTENNAS
0931 03-18 DO YOU WORK WITH BROADSIDE ARRAYS
0932 03-19 DO YOU WORK WITH END-FIRE ARRAYS
0933 03-20 DO YOU WORK WITH CARDIOID ARRAYS
0934 03-21 DO YOU WORK WITH COLLINEAR ARRAYS
0935 03-22 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC INDUCTION FIELDS WHEN WORKING WITH ANTENNAS
0936 03-23 DO YOU MEASURE ELECTROMAGNETIC INDUCTION FIELDS OF ANTENNAS
0937 03-24 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC RADIATION FIELDS WHEN WORKING WITH ANTENNAS
0938 03-25 DO YOU MEASURE ELECTROMAGNETIC RADIATION FIELDS OF ANTENNAS
0939 03-26 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA RADIATION
0940 03-27 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA INDUCTION FIELD
0941 03-28 ARE ANY OF THE ANTENNAS YOU WORK ON LINEARLY POLARIZED
0942 03-29 ARE ANY OF THE ANTENNAS YOU WORK ON CIRCULARLY POLARIZED
0943 03-30 DO YOU MEASURE OR DETERMINE THE POLARITY OF ANTENNAS YOU WORK ON
0944 03-31 DO YOU CONSTRUCT, OR MAKE THE CALCULATIONS NECESSARY TO CONSTRUCT, ANTENNAS OF CORRECT LENGTH FOR SPECIFIC WAVELENGTHS
0945 03-32 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS
0946 03-33 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS DIRECTORS
0947 03-34 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS REFLECTORS
0948 03-35 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN DON'T REMEMBER WHAT KIND OF ELEMENTS
0949 03-36 DO YOU WORK ON UNIDIRECTIONAL ANTENNAS
0850 03-37 DO YOU WORK ON BIDIRECTIONAL ANTENNAS
0851 03-38 DO YOU WORK ON DON'T REMEMBER THE DIRECTIONALITY
0852 03-39 DO YOU WORK WITH ROTAR ANTENNA ARRAYS

P TRANSMISSION LINES, WAVEGUIDES AND CAVITY RESONATORS, AND MICROWAVE AMPLIFIERS AND OSCILLATORS

P953 P1-01 IN YOUR PRESENT JOB DO YOU WORK WITH TRANSMISSION LINES (TRANSMISSION LINES ARE DEFINED TO INCLUDE LEADS BETWEEN RECEIVERS AND ANTENNAS, TELEPHONE LEADS, AS WELL AS HIGH VOLTAGE POWER LINES, ETC. DO NOT CONSIDER WAVEGUIDES AS TRANSMISSION LINES
P954 P1-02 DO YOU REFER TO OR USE COPPER LOSS OR I2R LOSS IN TRANSMISSION LINES
P955 P1-03 DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY CURRENTS IN TRANSMISSION LINES
P956 P1-04 DO YOU REFER TO OR USE RADIATION LOSS IN TRANSMISSION LINES
P957 P1-05 DO YOU USE OR REFER TO DIELECTRIC LOSS IN TRANSMISSION LINES
P958 P1-06 DO YOU USE OR REFER TO LEAKAGE LOSSES IN TRANSMISSION LINES
P959 P1-07 DO YOU WORK WITH TWISTED PAIR TRANSMISSION LINES
P960 P1-08 DO YOU WORK WITH TWIN LEAD TRANSMISSION LINES
P961 P1-09 DO YOU WORK WITH OPEN TWO-WIRE TRANSMISSION LINES
P962 P1-10 DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION LINES
P963 P1-11 DO YOU WORK WITH RIGID COAXIAL CABLE TRANSMISSION LINES
P964 P1-12 DO YOU TROUBLESHOOT TRANSMISSION LINES
P965 P1-13 DO YOU ANALYZE VOLTAGE OR CURRENT WAVEFORMS IN TRANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION (OPEN, SHORTED, CAPACITIVE, INDUCTIVE)
P966 P1-14 DO YOU SELECT APPROPRIATE TRANSMISSION LINES TERMINATIONS TO ACHIEVE DESIRED WAVEFORMS
P967 P1-15 DO YOU USE OR REFER TO SCHEMATIC SYMBOLS FOR LINE TERMINATIONS IN TERMS OF CIRCUIT TERMINATIONS
P968 P1-16 DO YOU MEASURE STANDING WAVE RATIOS (SR) OF

TRANSMISSION LINES
P969 P1-17 DO YOU CALCULATE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES
P970 P1-18 DO YOU PERFORM THE CALCULATIONS NECESSARY TO DETERMINE THE IMPEDANCE AND LENGTH OF QUARTER - WAVELENGTH MATCHING TRANSFORMERS TO MATCH TRANSMISSION LINES TO LOADS
P971 P1-19 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING MATCHING TRANSFORMERS
P972 P1-20 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING DELTA MATCHING
P973 P1-21 DO YOU SELECT THE TYPE OF TRANSMISSION LINE NEEDED FOR PARTICULAR JOBS WITHOUT REFERRING TO TECHNICAL DATA
P974 P1-22 DO YOU USE OR REFER TO THE TERM CHARACTERISTIC IMPEDANCE (ZO) OF TRANSMISSION LINES
P975 P1-23 DO YOU CALCULATE THE CHARACTERISTIC IMPEDANCE (ZO) OF TRANSMISSION LINES
P976 P1-24 DO YOU USE OR REFER TO THE TERM CUTOFF FREQUENCY OF TRANSMISSION LINES
P977 P1-25 DO YOU USE OR REFER TO THE TERM VELOCITY FACTOR (K) OF TRANSMISSION LINES
P978 P1-26 DO YOU COMPUTE THE ELECTRICAL LENGTH OF TRANSMISSION LINES FOR PARTICULAR FREQUENCIES
P979 P1-27 DO YOU CONSTRUCT TRANSMISSION LINES OF PARTICULAR ELECTRICAL LENGTH FOR GIVEN FREQUENCIES
P980 P1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT AS THE FREQUENCY INCREASES AND THE PHYSICAL LENGTH OF TRANSMISSION LINES REMAIN CONSTANT, THE ELECTRICAL LENGTH INCREASES
P981 P1-29 DO YOU WORK WITH NONRESONANT (FLAT) TRANSMISSION LINES
P982 P1-30 DO YOU WORK WITH RESONANT TRANSMISSION LINES
P983 P1-31 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING STUB MATCHING
P984 P2-01 DO YOU WORK WITH WAVEGUIDES OR CAVITY RESONATORS IN YOUR PRESENT JOB
P985 P2-02 DO YOU INSPECT WAVEGUIDES OR CAVITY RESONATORS
P986 P2-03 DO YOU CLEAN WAVEGUIDES OR CAVITY RESONATORS
P987 P2-04 DO YOU BEND WAVEGUIDES OR CAVITY RESONATORS
P988 P2-05 DO YOU TWIST WAVEGUIDES OR CAVITY RESONATORS
P989 P2-06 DO YOU PRESSURIZE WAVEGUIDES OR CAVITY RESONATORS
P990 P2-07 DO YOU PURGE WAVEGUIDES OR CAVITY RESONATORS
P991 P2-08 DO YOU TROUBLESHOOT WAVEGUIDES OR CAVITY RESONATORS
P992 P2-09 DO YOU REMOVE OR INSTALL COMPLETE WAVEGUIDES
P993 P2-10 DO YOU REMOVE OR INSTALL WAVEGUIDE SECTIONS
P994 P2-11 DO YOU REMOVE OR INSTALL DUMMY LOADS
P995 P2-12 DO YOU REMOVE OR INSTALL E BENDS
P996 P2-13 DO YOU REMOVE OR INSTALL H BENDS
P997 P2-14 DO YOU REMOVE OR INSTALL OTHER BENDS
P998 P2-15 DO YOU REMOVE OR INSTALL CHOKE JOINTS
P999 P2-16 DO YOU REMOVE OR INSTALL ROTATING JOINTS
P000 P2-17 DO YOU REMOVE OR INSTALL DIRECTIONAL COUPLERS
P001 P2-18 DO YOU REMOVE OR INSTALL BIDIRECTIONAL COUPLERS
P002 P2-19 DO YOU USE OR REFER TO "A" WALL OF WAVEGUIDES
P003 P2-20 DO YOU USE OR REFER TO "B" WALL OF WAVEGUIDES
P004 P2-21 DO YOU USE OR REFER TO CUTOFF FREQUENCY OF WAVEGUIDES
P005 P2-22 DO YOU USE OR REFER TO FREQUENCY-DETERMINING WALL OF WAVEGUIDES
P006 P2-23 DO YOU USE OR REFER TO POWER-DETERMINING WALL OF WAVEGUIDES
P007 P2-24 DO YOU USE OR REFER TO ELECTRIC FIELD BOUNDARY CONDITIONS
P008 P2-25 DO YOU USE OR REFER TO MAGNETIC FIELD BOUNDARY CONDITIONS
P009 P2-26 DO YOU USE OR REFER TO DUPLEXER FIELD BOUNDARY CONDITIONS
P010 P2-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST WAVEGUIDES ARE MADE WITH A "B" WALL SIZE OF .7 WAVELENGTHS OF THE OPERATING FREQUENCY
P011 P2-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST "A" WALLS RANGE FROM .2 TO .5 WAVELENGTHS IN SIZE, WITH .35 USED AS AN AVERAGE
P012 P2-29 ARE YOU CONCERNED WITH THE MATERIAL (SUCH AS BRASS) WHICH WAVEGUIDES ARE MADE OF
P013 P2-30 DO YOU COMPUTE THE LENGTH OF A WAVEGUIDE FOR SPECIFIC INSTALLATION
P014 P2-31 DO YOU USE THE RIGHT HAND RULE TO DETERMINE THE DIRECTION OF PROPAGATION, DIRECTION OF "E" FIELD, OR DIRECTION OF "H" FIELD IN WAVEGUIDES
P015 P2-32 DO YOU USE OR REFER TO THE TIME PHASE OF PEAK "E" OR "H" LINES IN WAVEGUIDES
P016 P2-33 DO YOU MEASURE THE TIME PHASE OF "E" OR "H" LINES IN WAVEGUIDES
P017 P2-34 DO YOU USE OR REFER TO THE SPACE QUADRATURE OF "E" OR "H" LINES IN WAVEGUIDES
P018 P2-35 ARE HIGH POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH
P019 P2-36 ARE LOW POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH
P020 P2-37 ARE LOOPS USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH
P021 P2-38 ARE APERTURES (WINDOWS OR IRISES) USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH
P022 P2-39 ARE DON'T REMEMBER THE KIND OF ENERGY COUPLING USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH
P023 P2-90 DO YOU DETERMINE WHERE PROBES SHOULD BE MOUNTED IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA
P024 P2-91 DO YOU DETERMINE THE POSITIONING OF LOOPS IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA
P025 P2-92 DO YOU DETERMINE THE POSITIONING OR SIZE OF APERTURES IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA
P026 P2-93 ARE CHOKE JOINTS USED IN WAVEGUIDES OR CAVITY

RESONATORS YOU WORK WITH
P027 P2-44 ARE ROTATING JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH
P028 P2-45 ARE DON'T REMEMBER THE KIND OF JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH
P029 P2-46 DO YOU TUNE CAVITY RESONATORS USING CAPACITIVE TUNING
P030 P2-47 DO YOU TUNE CAVITY RESONATORS USING INDUCTIVE TUNING
P031 P2-48 DO YOU TUNE CAVITY RESONATORS USING VOLUME TUNING
P032 P2-49 DO YOU TUNE CAVITY RESONATORS USING DON'T REMEMBER THE METHOD OF TUNING
P033 P2-50 DO YOU MEASURE THE FREQUENCY OF SIGNALS IN CAVITY RESONATORS
P034 P3-01 IN YOUR PRESENT JOB DO YOU WORK WITH KLYSTRONS, TRAVELING WAVE TUBES (TWT), PARAMETRIC AMPLIFIERS, OR MAGNETRONS
P035 P3-02 DO YOU USE OR REFER TO INTERELECTRODE CAPACITANCE
P036 P3-03 DO YOU USE OR REFER TO ELECTRON TRANSIT TIME
P037 P3-04 DO YOU USE OR REFER TO LEAD INDUCTANCE
P038 P3-05 DO YOU USE OR REFER TO RF LOSSES IN EXTERNAL CIRCUITRY
P039 P3-06 DO YOU USE OR REFER TO PRINCIPLE OF ELECTRON VELOCITY MODULATION
P040 P3-07 DO YOU USE OR REFER TO ELECTRON BUNCHING
P041 P3-08 DO YOU WORK WITH TWO-CAVITY KLYSTRONS
P042 P3-09 DO YOU WORK WITH THREE-CAVITY KLYSTRONS
P043 P3-10 DO YOU WORK WITH REFLEX KLYSTRONS
P044 P3-11 DO YOU WORK WITH TRAVELING-WAVE TUBES (TWT)
P045 P3-12 DO YOU WORK WITH NONDEGENERATIVE PARAMETRIC AMPLIFIERS
P046 P3-13 DO YOU WORK WITH UP-CONVERTER PARAMETRIC AMPLIFIERS
P047 P3-14 DO YOU WORK WITH MAGNETRONS
P048 P3-15 DO YOU INSPECT KLYSTRONS OR TWT
P049 P3-16 DO YOU CLEAN KLYSTRONS OR TWT
P050 P3-17 DO YOU TUNE KLYSTRONS OR TWT ELECTRICALLY
P051 P3-18 DO YOU TUNE KLYSTRONS OR TWT MECHANICALLY
P052 P3-19 DO YOU PERFORM OPERATIONAL CHECKS OF KLYSTRONS OR TWT
P053 P3-20 DO YOU TROUBLESHOOT KLYSTRONS OR TWT
P054 P3-21 DO YOU REMOVE OR REPLACE COMPLETE KLYSTRON OR TWT
P055 P3-22 DO YOU REMOVE OR REPLACE KLYSTRON OR TWT COMPONENTS
P056 P3-23 DO YOU INSPECT PARAMETRIC AMPLIFIERS
P057 P3-24 DO YOU CLEAN PARAMETRIC AMPLIFIERS
P058 P3-25 DO YOU ADJUST PARAMETRIC AMPLIFIERS
P059 P3-26 DO YOU TUNE PARAMETRIC AMPLIFIERS
P060 P3-27 DO YOU PERFORM OPERATIONAL CHECKS OF PARAMETRIC AMPLIFIERS
P061 P3-28 DO YOU TROUBLESHOOT PARAMETRIC AMPLIFIERS
P062 P3-29 DO YOU REMOVE OR REPLACE COMPLETE PARAMETRIC AMPLIFIER
P063 P3-30 DO YOU REMOVE OR REPLACE PARAMETRIC AMPLIFIER COMPONENTS
P064 P3-31 DO YOU INSPECT MAGNETRONS
P065 P3-32 DO YOU CLEAN MAGNETRONS
P066 P3-33 DO YOU ADJUST MAGNETRONS
P067 P3-34 DO YOU TUNE MAGNETRONS
P068 P3-35 DO YOU PERFORM OPERATIONAL CHECKS OF MAGNETRONS
P069 P3-36 DO YOU TROUBLESHOOT MAGNETRONS
P070 P3-37 DO YOU REMOVE OR REPLACE COMPLETE MAGNETRON
P071 P3-38 DO YOU REMOVE OR REPLACE MAGNETRON COMPONENTS
P072 P3-39 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS COLLECTOR PLATES
P073 P3-40 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER CAVITIES
P074 P3-41 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER GRIDS
P075 P3-42 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS FEEDBACK LOOPS
P076 P3-43 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS DRIFT SPACES
P077 P3-44 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER GRIDS
P078 P3-45 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER CAVITIES
P079 P3-46 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CONTROL GRIDS
P080 P3-47 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATHODES
P081 P3-48 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON REPELLER (REFLECTOR) PLATES
P082 P3-49 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRIDS
P083 P3-50 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRID CAVITY GAPS
P084 P3-51 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON RESONANT CAVITIES
P085 P3-52 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON MAGNETIC COUPLING LOOPS
P086 P3-53 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON FILAMENTS
P087 P3-54 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON CATHODES
P088 P3-55 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON OUTPUT LEADS
P089 P3-56 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES FILAMENTS
P090 P3-57 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES CATHODES
P091 P3-58 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MODULATOR GRIDS
P092 P3-59 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ANODES
P093 P3-60 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES HELIXES
P094 P3-61 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF

TRAVELING-WAVE TUBES COLLECTORS
P095 P3-62 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MAGNETS
P096 P3-63 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ATTENUATORS
P097 P3-64 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE CIRCULATORS
P098 P3-65 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER SIGNAL CAVITIES
P099 P3-66 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER IDLER CAVITIES
P100 P3-67 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER VARACTOR DIODES
P101 P3-68 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE ISOLATORS
P102 P3-69 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER REVERSE-BIAS BATTERIES
P103 P3-70 DO YOU PERFORM TASKS ON ANODES
P104 P3-71 DO YOU PERFORM TASKS ON ANODE COOLING PINS
P105 P3-72 DO YOU PERFORM TASKS ON COUPLING LOOPS
P106 P3-73 DO YOU PERFORM TASKS ON HEATER LEADS
P107 P3-74 DO YOU PERFORM TASKS ON RESONANT CAVITIES
P108 P3-75 DO YOU PERFORM TASKS ON CATHODES
P109 P3-76 DO YOU PERFORM TASKS ON MAGNETS

Q REGISTERS, STORAGE DEVICES, AND DIGITAL TO ANALOG CONVERTERS

Q110 Q1-01 DO YOU USE OR REFER TO STORAGE REGISTERS
Q111 Q1-02 DO YOU USE OR REFER TO SHIFT REGISTERS
Q112 Q1-03 DO YOU USE OR REFER TO LOGIC SYMBOLS OF SHIFT REGISTERS
Q113 Q1-04 DO YOU USE OR REFER TO LOGIC SYMBOLS OF STORAGE REGISTERS
Q114 Q1-05 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS
Q115 Q1-06 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF REGISTERS
Q116 Q1-07 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES HAVE PASSED
Q117 Q2-01 DO YOU WORK WITH DIGITAL COUNTERS, REGISTERS, OR STORAGE DEVICES IN YOUR PRESENT JOB
Q118 Q2-02 DO YOU USE OR REFER TO DELAY LINES
Q119 Q2-03 DO YOU USE OR REFER TO MAGNETIC CORES
Q120 Q2-04 DO YOU USE OR REFER TO MAGNETIC DRUMS
Q121 Q2-05 DO YOU USE OR REFER TO MAGNETIC TAPES
Q122 Q2-06 DO YOU USE OR REFER TO ACCESS TIME OR SPEED OR MEMORY SYSTEMS
Q123 Q2-07 DO YOU USE OR REFER TO WORD CAPACITY OF MEMORY SYSTEMS
Q124 Q2-08 DO YOU USE OR REFER TO VOLATILITY OF MEMORY SYSTEMS
Q125 Q2-09 DO YOU USE OR REFER TO LOGIC SYMBOL OF DELAY LINES
Q126 Q3-01 IN YOUR PRESENT JOB, DO YOU WORK WITH DIGITAL-TO-ANALOG (D/A) CONVERTERS, ANALOG-TO-DIGITAL (A/D) CONVERTERS, OR BINARY-TO-DECIMAL READOUT CONVERTERS
Q127 Q3-02 DO YOU COMPUTE OUTPUT VOLTAGES FOR ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT VOLTAGES
Q128 Q3-03 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE COUNT IN ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS IS DETERMINED BY ADDING THE DENOMINATORS OF THE RESISTORS
Q129 Q3-04 DO YOU COMPUTE ANALOG VOLTAGES FOR GIVEN BINARY COUNTS IN ELECTRONIC DIGITAL-TO-ANALOG (D/A) CONVERTERS
Q130 Q3-05 DO YOU PERFORM SAMPLE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS
Q131 Q3-06 DO YOU PERFORM HOLD FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS
Q132 Q3-07 DO YOU PERFORM COMPARE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS
Q133 Q3-08 DO YOU PERFORM DIGITIZE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS
Q134 Q3-09 DO YOU PERFORM DON'T REMEMBER WHICH FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS
Q135 Q3-10 DO YOU USE OR REFER TO SAMPLE FUNCTION OF A/D CONVERTERS
Q136 Q3-11 DO YOU USE OR REFER TO HOLD FUNCTION OF A/D CONVERTERS
Q137 Q3-12 DO YOU USE OR REFER TO COMPARE FUNCTION OF A/D CONVERTERS
Q138 Q3-13 DO YOU USE OR REFER TO DIGITAL FUNCTION OF A/D CONVERTERS
Q139 Q3-14 DO YOU PERFORM ANY TASKS ON MECHANICAL ANALOG-TO-DIGITAL (A/D) CONVERTERS

R PHANTASTRONS, SCHMITT TRIGGERS, AND CABLE FABRICATION

R140 R1-01 DO YOU WORK WITH PHANTASTRON CIRCUITRY IN YOUR PRESENT JOB
R141 R2-01 IN YOUR PRESENT JOB DO YOU WORK WITH SCHMITT TRIGGER CIRCUITS
R142 R2-02 DO YOU TRACE DATA FLOW THROUGH SCHMITT TRIGGER SCHEMATIC DIAGRAMS
R143 R2-03 DO YOU USE OR REFER TO SCHMITT TRIGGER LOGIC SYMBOLS
R144 R3-01 IN YOUR PRESENT JOB DO YOU FABRICATE MULTICONDUCTOR CABLES
R145 R3-02 DO YOU FABRICATE COAXIAL CABLES

S INPUT\OUTPUT DEVICES, PHOTO SENSITIVE DEVICES, AND SYNCHRONOUS VIBRATIONS

S146 S1-01 IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS ON VISUAL READOUT SYSTEMS
S147 S1-02 DO YOU PERFORM ANY TASKS ON NIXIE LIGHTS OR NIXIE LIGHT DECODER SYSTEMS
S148 S1-03 DO YOU ANALYZE NIXIE LIGHT DECODER SYSTEMS USING BOOLEAN ALGEBRA
S149 S2-01 DO YOU WORK WITH PHOTO TUBES IN YOUR PRESENT JOB
S150 S3-01 IN YOUR PRESENT JOB DO YOU WORK WITH CHOPPER CIRCUITS
S151 S3-02 DO YOU MEASURE EXCITATION FREQUENCIES
S152 S3-03 DO YOU MEASURE VOLTAGE-CURRENT PHASE RELATIONSHIPS
S153 S3-04 DO YOU USE OR REFER TO EXCITATION FREQUENCIES
S154 S3-05 DO YOU USE OR REFER TO VOLTAGE-CURRENT PHASE RELATIONSHIPS
S155 S3-06 DO YOU USE SERVOS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION
S156 S3-07 DO YOU USE DETECTORS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION
S157 S3-08 DO YOU USE ERROR SIGNAL DEVICES IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION
S158 S3-09 DO YOU USE COMPARISON CIRCUITS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION

T INFRARED, LASERS, AND DISPLAY TUBES

T159 T1-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH INFRARED SYSTEMS
T160 T1-02 DO YOU INSPECT INFRARED SYSTEMS
T161 T1-03 DO YOU CLEAN INFRARED SYSTEMS
T162 T1-04 DO YOU ADJUST OR CALIBRATE INFRARED SYSTEMS
T163 T1-05 DO YOU OPERATE INFRARED SYSTEMS
T164 T1-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF INFRARED SYSTEMS
T165 T1-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF INFRARED SYSTEMS
T166 T1-08 DO YOU TROUBLESHOOT DOWN TO INFRARED SYSTEM COMPONENT PARTS
T167 T1-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF INFRARED SYSTEMS
T168 T1-10 DO YOU REMOVE OR REPLACE INFRARED SYSTEM COMPONENT PARTS
T169 T1-11 DO YOU USE OR REFER TO FAR REGION
T170 T1-12 DO YOU USE OR REFER TO INTERMEDIATE REGION
T171 T1-13 DO YOU USE OR REFER TO NEAR REGION
T172 T1-14 DO YOU USE OR REFER TO MICRON
T173 T1-15 DO YOU USE OR REFER TO GRAY BODIES
T174 T1-16 DO YOU USE OR REFER TO BLACK BODIES
T175 T1-17 DO YOU USE OR REFER TO ABSORPTION
T176 T1-18 DO YOU USE OR REFER TO SCATTERING
T177 T1-19 DO YOU USE OR REFER TO ABSOLUTE ZERO
T178 T1-20 DO YOU PERFORM TASKS ON BLITZ
T179 T1-21 DO YOU PERFORM TASKS ON TARGET BUTTONS
T180 T1-22 DO YOU PERFORM TASKS ON ERECTOR LENSES
T181 T1-23 DO YOU PERFORM TASKS ON OCULAR LENSES
T182 T1-24 DO YOU PERFORM TASKS ON CORRECTION LENSES
T183 T1-25 DO YOU PERFORM TASKS ON FILTERS
T184 T1-26 DO YOU PERFORM TASKS ON SPHERICAL MIRRORS
T185 T1-27 DO YOU PERFORM TASKS ON PLANE MIRRORS
T186 T2-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH LASERS
T187 T2-02 DO YOU INSPECT LASER SYSTEMS
T188 T2-03 DO YOU CLEAN LASER SYSTEMS
T189 T2-04 DO YOU OPERATE LASER SYSTEMS
T190 T2-05 DO YOU OPERATE LASER SYSTEMS
T191 T2-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF LASER SYSTEMS
T192 T2-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF LASER SYSTEMS
T193 T2-08 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF LASER SYSTEMS
T194 T2-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF LASER SYSTEMS
T195 T2-10 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF LASER SYSTEMS
T196 T2-11 DO YOU USE OR REFER TO ANGSTROMS (A)
T197 T2-12 DO YOU USE OR REFER TO ELECTRON ENERGY LEVELS
T198 T2-13 DO YOU USE OR REFER TO GROUND STATE
T199 T2-14 DO YOU USE OR REFER TO EXCITED STATE
T200 T2-15 DO YOU USE OR REFER TO PACKET OF RADIATION
T201 T2-16 DO YOU USE OR REFER TO PHOTONS
T202 T2-17 DO YOU USE OR REFER TO SPONTANEOUS EMISSION
T203 T2-18 DO YOU USE OR REFER TO STIMULATED EMISSION
T204 T2-19 DO YOU USE OR REFER TO COHERENCE OR INCOHERENCE
T205 T2-20 DO YOU USE OR REFER TO INVERSION LEVEL
T206 T2-21 DO YOU USE OR REFER TO MONOCHROMATIC
T207 T2-22 DO YOU WORK WITH ACTIVE MATERIALS
T208 T2-23 DO YOU WORK WITH PUMPING SOURCES
T209 T2-24 DO YOU WORK WITH FULL SILVERED (100% REFLECTIVE) MIRRORS
T210 T2-25 DO YOU WORK WITH HALF SILVERED (92% REFLECTIVE) MIRRORS
T211 T2-26 DO YOU WORK WITH HELICAL FLASHTUBES
T212 T2-27 DO YOU WORK WITH RUBY
T213 T2-28 DO YOU WORK WITH HELIUM-NEON
T214 T2-29 DO YOU WORK WITH HELIUM-XENON
T215 T2-30 DO YOU WORK WITH XENON
T216 T2-31 DO YOU WORK WITH CESIUM-HELIUM
T217 T2-32 DO YOU WORK WITH ARGON
T218 T2-33 DO YOU WORK WITH NEODYMIUM IN GLASS
T219 T2-34 DO YOU WORK WITH GALLIUM ARSENIDE
T220 T3-01 IN YOUR PRESENT JOB DO YOU WORK WITH DISPLAY TUBES, SUCH AS DIRECT VIEW STORAGE (DVST) OR MULTIPLE MODE STORAGE TUBES (MMST)
T221 T3-02 DO YOU INSPECT DVST OR MMST
T222 T3-03 DO YOU CLEAN DVST OR MMST

T223 T3-04 DO YOU ADJUST OR CALIBRATE DVST OR MMST
T224 T3-05 DO YOU OPERATE SYSTEMS THAT CONTAIN DVST OR MMST
T225 T3-06 DO YOU TROUBLESHOOT DVST OR MMST CIRCUITS
T226 T3-07 DO YOU REMOVE OR REPLACE DVST OR MMST TUBES FROM MAJOR ASSEMBLIES OR UNITS
T227 T3-08 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF DVST
T228 T3-09 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF MMST
T229 T3-10 DO YOU PERFORM TASKS ON FLOOD GUNS
T230 T3-11 DO YOU PERFORM TASKS ON WRITE GUNS
T231 T3-12 DO YOU PERFORM TASKS ON ATTACK GUNS
T232 T3-13 DO YOU PERFORM TASKS ON ERASE GUNS
T233 T3-14 DO YOU PERFORM TASKS ON STORAGE GRIDS

U PROGRAMMING, DB AND POWER RATIOS

U234 U1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY PROGRAMMING TASKS
U235 U1-02 DO YOU USE OR REFER TO DECIMAL SYSTEMS
U236 U1-03 DO YOU USE OR REFER TO PROGRAMS
U237 U1-04 DO YOU USE OR REFER TO HEXIDECIMAL SYSTEMS
U238 U1-05 DO YOU USE OR REFER TO 8-4-2-1 SYSTEMS
U239 U1-06 DO YOU USE OR REFER TO FOUR SYSTEMS
U240 U1-07 DO YOU USE OR REFER TO BINARY SYSTEMS
U241 U1-08 DO YOU USE OR REFER TO TIME-SHARING
U242 U1-09 DO YOU USE OR REFER TO DATA WORDS
U243 U1-10 DO YOU USE OR REFER TO ADDRESS WORDS
U244 U1-11 DO YOU USE OR REFER TO ADDRESS/SUBADDRESS
U245 U1-12 DO YOU USE OR REFER TO STEERING/INFORMATION
U246 U1-13 DO YOU USE OR REFER TO INFORMATION WORDS
U247 U1-14 DO YOU PERFORM TASKS ON SINGLE LEVEL PROGRAMMING
U248 U1-15 DO YOU PERFORM TASKS ON MULTI-LEVEL PROGRAMMING
U249 U1-16 DO YOU PERFORM TASKS ON INPUT DEVICES
U250 U1-17 DO YOU PERFORM TASKS ON STORAGE DEVICES
U251 U1-18 DO YOU PERFORM TASKS ON ARITHMETIC SECTIONS
U252 U1-19 DO YOU PERFORM TASKS ON CONTROL SECTIONS
U253 U1-20 DO YOU PERFORM TASKS ON OUTPUT DEVICES
U254 U1-21 DO YOU PERFORM TASKS ON POWER SUPPLIES
U255 U2-01 DO YOU USE DECIBELS TO EXPRESS AMPLIFICATION AND ATTENUATION
U256 U2-02 DO YOU USE LOGARITHMS TO COMPUTE OUTPUT POWER IN DECIBELS
U257 U2-03 DO YOU USE LOGARITHMS TO COMPUTE ATTENUATION IN DECIBELS

AD-A032 843 AIR FORCE OCCUPATIONAL MEASUREMENT CENTER LACKLAND A--ETC F/G 5/9
ELECTRONICS PRINCIPLES PRECISION MEASURING EQUIPMENT CAREER LAD--ETC(U)
NOV 76 T J O'CONNOR, G B COLE

UNCLASSIFIED NL

3 OF 3
ADA
032843

END
DATE
FILMED
1-79
DDC

SUPPLEMENTARY

INFORMATION

UNCLASSIFIED
SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered) Corrected

A032 843

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER AFPT 90-324-222	2. GOVT ACCESSION NO. AD A032 843	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Electronics Principles Precision Measuring Equipment Career Ladder AFSCs 32430, 32450, 32470, and 32490		5. TYPE OF REPORT & PERIOD COVERED FINAL 6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Thomas J. O'Connor Guy B. Cole		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS Occupational Survey Branch USAF Occupational Measurement Center Lackland AFB TX 78236		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS N/A
11. CONTROLLING OFFICE NAME AND ADDRESS SAME AS ITEM 9		12. REPORT DATE 5 November 1976 13. NUMBER OF PAGES 152
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office)		15. SECURITY CLASS. (of this report) UNCLASSIFIED 15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Electronic principles	Electronics
Basic electronics	Air Force Training
Avionics	Teaching Methods
Electronic Equipment	Training
Electronic Technicians	

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

This report summarizes the results of a comprehensive survey of Electronics Principles used by personnel in the Precision Measuring Equipment career ladder. The report gives a detailed listing of the technical tasks and knowledge needed to perform the jobs within the specialty or career ladder.

CONTINUED

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

UNCLASSIFIED
SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

This specialty has the following functions:

Aligns, inspects, troubleshoots, repairs, overhauls, modifies, calibrates, and certifies electrical/electronic precision measurement equipment including working standards, using authorized maintenance and calibration procedures and equipment. Inspects, calibrates, and certifies precision measuring equipment including working standards. Supervises precision measuring equipment personnel.