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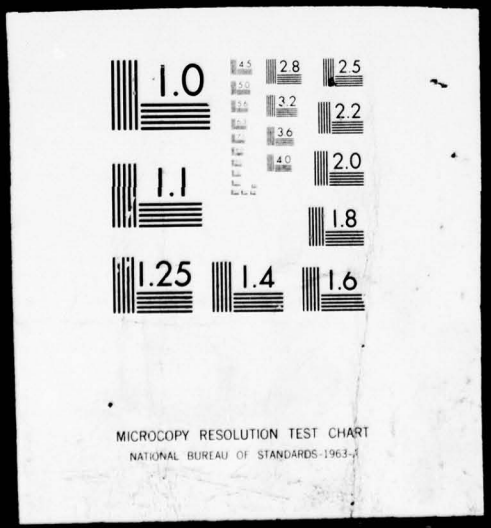
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OCCUPATIONAL SURVEY REPORT



(9) Rept. for Dec 76-Mar 77.

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ELECTRONIC PRINCIPLES OCCUPATIONAL SURVEY REPORT
AVIONIC COMMUNICATIONS
CAREER LADDER
AFSC 328X0.

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LACKLAND AFB TEXAS 78236

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PREFACE

This report presents a summary of the results of a detailed Air Force Electronic Principles Survey of the Avionic Communications Specialty, AFSC 328X0.

The Electronic Principles Inventory (EPI) was developed by Major Thomas J. O'Connor and Mr. Hendrick W. Ruck and the survey data were analyzed by Captain Leon J. Tauscher. 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
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Chief, Occupational Survey Branch
USAF Occupational Measurement Center

ELECTRONIC PRINCIPLES OCCUPATIONAL SURVEY REPORT
AVIONIC COMMUNICATIONS CAREER LADDER
AFSC 328X0

INTRODUCTION

This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned to Avionic Communications Specialty (AFSC 328X0). The data for this report were collected during the period December 1976 through March 1977.

This report describes: (1) development and administration of the survey instrument; and (2) electronic principles used by DAFSC 5-skill level personnel both CONUS and overseas and assigned to selected major commands.

DEVELOPMENT OF THE ELECTRONIC PRINCIPLES INVENTORY (EPI)

The EPI was developed by personnel from the Occupational Survey Branch who were well qualified in theoretical physics and electronics, as well as in task analysis and survey development. Over 300 maintenance personnel from SAC, TAC, ADC, MAC, and AFCS participated in the development of the inventory. Representing the five ATC training centers, electronics experts who averaged 12 years of maintenance experience and four years of electronic principles instruction experience spent several weeks refining the EPI. In addition, personnel at the Electrical Engineering Department of the USAF Academy and the Air Force Human Resources Laboratory were consulted during the development of the inventory.

The final version of the EPI used in this survey contained 1,257 items in 62 subject matter areas covering all electronic principles training given at the five ATC technical training centers. Table 1 lists the 62 subject areas.

ADMINISTRATION

The Electronic Principles Inventory was administered by mail to AFSC 328X0 airmen worldwide. Responses from 1001 5-skill level individuals represented 67 percent of the total of all DAFSC 32850 personnel. Table 2 shows the percentage distribution by major command of the survey incumbents.

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TABLE 1

EPI SUBJECT AREAS

SEQUENCE OF SUBJECT AREAS	SUBJECT AREA TITLE	BEGINNING ITEM NUMBER	GPSUM PAGE NUMBER
1	MATHEMATICS	A1	2
2	DIRECT CURRENT AND VOLTAGE	A15	2
3	RESISTANCE	A24	2
4	MULTIMETER USES	B52	3
5	ALTERNATING CURRENT	B61	4
6	INDUCTORS AND INDUCTIVE REACTANCE	B67	4
7	CAPACITORS AND CAPACITIVE REACTANCE	C92	5
8	TRANSFORMERS	C128	6
9	MAGNETISM	C171	7
10	RCL CIRCUITS	D185	8
11	SERIES AND PARALLEL RESONANCE (TIME CONSTANTS)	D229	9
12	FILTERS	D239	10
13	COUPLING	E261	11
14	SOLDERING	E273	12
15	RELAYS	E294	12
16	MICROPHONES	F314	13
17	SPEAKERS	F327	13
18	OSCILLOSCOPES	F342	13
19	SEMICONDUCTOR DIODES	G354	14
20	TRANSISTORS	G404	16
21	TRANSISTOR AMPLIFIERS	G428	17
22	SOLID-STATE SPECIAL PURPOSE DEVICES	H477	19
23	POWER SUPPLIES	H483	19
24	OSCILLATORS	H512	20
25	MULTIVIBRATORS	I539	21
26	LIMITERS AND CLAMPERS	I555	21
27	ELECTRON TUBES	I565	21
28	ELECTRON TUBE AMPLIFIERS AND CIRCUITS	J609	23
29	SPECIAL PURPOSE ELECTRON TUBES	J616	23
30	HETERODYNING, MODULATION, AND DEMODULATION	J632	24
31	AM SYSTEMS	K638	24
32	FM SYSTEMS	K666	25

TABLE 1 (CONTINUED)

EPI SUBJECT AREAS

SEQUENCE OF SUBJECT AREAS	SUBJECT AREA TITLE	BEGINNING ITEM NUMBER	GPSUM PAGE NUMBER
33	NUMBERING SYSTEMS	K685	25
34	LOGIC FUNCTIONS	L695	26
35	BOOLEAN EQUATIONS	L708	26
36	COUNTERS	L733	27
37	TIMING CIRCUITS	M757	28
38	USE OF SIGNAL GENERATORS	M769	28
39	MOTORS AND GENERATORS	M779	29
40	METER MOVEMENTS	N808	29
41	SATURABLE REACTORS AND MAGNETIC AMPLIFIERS	N818	30
42	WAVESHAPING CIRCUITS	N834	30
43	SINGLE SIDEBAND SYSTEMS	0845	31
44	PULSE MODULATION SYSTEMS	0875	32
45	ANTENNAS	0914	33
46	TRANSMISSION LINES	P953	34
47	WAVEGUIDES AND CAVITY RESONATORS	P984	36
48	MICROWAVE AMPLIFIERS AND OSCILLATORS	P1034	37
49	REGISTERS	Q1110	40
50	STORAGE DEVICES	Q1117	40
51	DIGITAL TO ANALOG CONVERTERS	Q1126	40
52	PHANTASTRONS	Q1140	41
53	SCHMITT TRIGGERS	R1141	41
54	CABLE FABRICATION	R1144	41
55	INPUT/OUTPUT DEVICES	S1146	41
56	PHOTO SENSITIVE DEVICES	S1149	41
57	SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS)	S1150	41
58	INFRARED	T1159	42
59	LASERS	T1186	42
60	DISPLAY TUBES	T1220	43
61	PROGRAMMING	U1234	44
62	DB AND POWER RATIOS	U1255	44

TABLE 2

COMMAND REPRESENTATION OF SURVEY SAMPLE

	DAFSC 32850	
COMMAND	PERCENT ASSIGNED	PERCENT OF SAMPLE
TAC	22	22
MAC	21	22
SAC	19	26
ATC	6	6
USAFE	9	7
ADC	6	7
OTHER	17	10
TOTAL	100	100

Total 5-skill level Assigned - 1497
Total 5-skill level Sampled - 1001
Percent 5-skill level Sampled - 67%

PRESENTATON OF RESULTS

Personnel responded "yes" or "no" to the 1,257 electronic principles questions as related to their present job. A Group Summary (GPSUM) computer printout is provided in the Appendix portion of this report. Page 1 of the GPSUM lists the seven selected groups identified for this report. Pages 2-44 show the percentage of the incumbents responding to the EPI items. The computer program results display the percent members answering "yes" to the subject area questions. The reader can locate a specific subject area by referring to the Appendix page number as listed in Table 1. For example, the Transformers area results are given on page 6 of the GPSUM. Overall, survey incumbents indicated "high job use" of electronic principles in thirteen subject areas: Resistance (pp. 2-3), Multimeter Uses (p. 3), Alternating Current (p. 4), Capacitors and Capacitive Reactance (pp. 5-6), Filters (pp. 10-11), Coupling (p. 11), Soldering (pp. 11-12), Relays (p. 12), Microphones (p. 12), Oscilloscopes (p. 13), Power Supplies (p. 19), AM Systems (pp. 23-24), and Cable Fabrication (p. 41). "Low job use" of electronic principles was also noted in several areas. For example, principles associated with Pulse Modulation Systems (pp. 31-32), Waveguides and Cavity Resonators (pp. 35-36), Microwave Amplifiers and Oscillators (pp. 37-38), Storage Devices (p. 40), Digital to Analog Converters (p. 40), Phantastrons (p. 41), Infrared (pp. 41-42), Lasers (pp. 42-43), Display Tubes (p. 43), and Programming (pp. 43-44) were used by very few job incumbents. Additional AFSC 328X0 data can be obtained upon request to the Chief, Occupational Survey Branch (OMY).

APPENDIX

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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	PCT MBRS PERF TASKS- DAFSC/MAJCOM GRPS	2

AF HUMAN RESOURCES LABORATORY
AIR FORCE SYSTEMS COMMAND

TABULATION OF PERCENT MEMBERS PERFORMING TASKS BY SELECTED DAFSC AND MAJCOM GROUPS IN THE 328XD CAREER FIELD.

REPORTS ON THE FOLLOWING GROUPS WERE REQUESTED

GROUP IDENTITY =	SPC001	ALL AIRMEN WITH DAFSC 32850	CONTAINING	1001 MEMBERS.
GROUP IDENTITY =	SPC002	ALL DAFSC 32850 IN ADC	CONTAINING	70 MEMBERS.
GROUP IDENTITY =	SPC003	ALL DAFSC 32850 IN ATC	CONTAINING	56 MEMBERS.
GROUP IDENTITY =	SPC004	ALL DAFSC 32850 IN MAC	CONTAINING	217 MEMBERS.
GROUP IDENTITY =	SPC005	ALL DAFSC 32850 IN SAC	CONTAINING	263 MEMBERS.
GROUP IDENTITY =	SPC006	ALL DAFSC 32850 IN TAC	CONTAINING	221 MEMBERS.
GROUP IDENTITY =	SPC007	ALL DAFSC 32850 IN USAFE	CONTAINING	70 MEMBERS.

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
A	1	A1-01 IN YOUR PRESENT JOB, DO YOU USE INSTRUMENTS, SUCH AS METERS OR OSCILLOSCOPES, IN WHICH IT IS NECESSARY TO	79	81	73	82	81	77	89	
A	2	A1-02 DO YOU USE PUBLICATIONS, SUCH AS A TECHNICAL ORDERS OR MAINTENANCE MANUALS, IN WHICH IT IS NECESSARY FOR YOU	41	39	48	45	40	41	34	MATHEMATICS
A	3	A1-03 DO YOU REARRANGE AND SOLVE FORMULAS OR EQUATIONS.	38	34	46	36	41	32	44	
A	4	A1-04 DO YOU CALCULATE THE SQUARE ROOT OF A QUANTITY.	12	6	14	15	12	11	17	
A	5	A1-05 DO YOU SOLVE FOR UNKNOWN QUANTITIES.	30	20	38	31	33	26	34	
A	6	A1-06 DO YOU CONVERT NUMBERS TO LOGARITHMS.	6	1	20	2	7	5	11	
A	7	A1-07 DO YOU USE LOGARITHM TABLES IN ANY TYPE OF CALCULATIONS.	6	4	18	2	8	4	14	
A	8	A1-08 DO YOU SOLVE QUADRATIC EQUATIONS.	7	4	14	6	7	5	9	
A	9	A1-09 DO YOU USE THE NATURAL SYSTEM OF LOGARITHMS.	4	1	13	1	5	3	6	
A	10	A1-10 DO YOU PERFORM CALCULATIONS ON VECTOR QUANTITIES.	8	4	20	7	10	5	9	
A	11	A1-11 DO YOU WORK WITH TRIGONOMETRIC FUNCTIONS SUCH AS SINE, COSINE, OR TANGENT.	8	4	18	7	9	5	11	
A	12	A1-12 DO YOU DETERMINE AREAS OF PLANE FIGURES.	4	3	5	3	4	4	4	
A	13	A1-13 DO YOU SOLVE OR USE SIMULTANEOUS EQUATIONS.	8	3	14	9	6	7	13	
A	14	A1-14 DO YOU SOLVE OR USE PROPORTIONS.	27	30	30	26	28	22	40	
A	15	A2-01 DO YOU USE THE TERM VOLTAGE OR VOLT (V).	97	99	96	96	98	96	100	
A	16	A2-02 DO YOU USE THE TERM ELECTROMOTIVE FORCE (EMF).	36	29	45	39	35	32	39	
A	17	A2-03 DO YOU USE THE TERM OHM.	96	99	95	95	97	94	99	DIRECT CURRENT AND VOLTAGE
A	18	A2-04 DO YOU USE THE TERM ION.	13	6	23	12	13	13	13	
A	19	A2-05 DO YOU USE THE TERM DYNE.	6	0	13	6	5	5	7	
A	20	A2-06 DO YOU USE THE TERM AMPERE.	90	89	95	91	89	88	91	
A	21	A2-07 DO YOU USE THE TERM NEUTRON.	12	4	18	14	11	14	11	
A	22	A2-08 DO YOU USE THE TERM COULOMB.	14	16	18	11	15	14	19	
A	23	A2-09 DO YOU USE THE TERM PROTON.	13	6	16	14	11	15	11	
A	24	A3-01 DO YOU WORK WITH RESISTORS IN YOUR PRESENT JOB.	87	94	88	86	86	86	93	
A	25	A3-02 DO YOU INSPECT RESISTORS.	94	97	88	92	97	93	99	
A	26	A3-03 DO YOU CLEAN RESISTORS.	82	84	63	82	89	77	83	
A	27	A3-04 DO YOU ADJUST RESISTORS.	91	96	82	87	96	88	99	
A	28	A3-05 DO YOU CHECK OHMIC VALUE OR RESISTORS.	94	99	91	93	97	91	99	RESISTANCE
A	29	A3-06 DO YOU REMOVE OR REPLACE RESISTORS.	94	99	84	92	96	92	99	
A	30	A3-07 DO YOU USE OR REFER TO TEMPERATURE COEFFICIENTS FOR RESISTORS ON ANY TASKS YOU PERFORM.	25	26	21	25	21	28	40	
A	31	A3-08 DO YOU USE OR REFER TO RESISTOR SYMBOLS SUCH AS FIXED RESISTOR SYMBOLS OR TAPPED RESISTOR SYMBOLS.	93	97	89	90	95	90	99	
A	32	A3-09 DO YOU IDENTIFY OR CLASSIFY THE RESISTORS YOU WORK WITH AS CARBON, FIXED WIRE, SLIDE TAP, RHEOSTAT, OR	90	90	86	86	93	88	96	
A	33	A3-10 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE OHMIC VALUE OF RESISTANCE.	93	97	88	88	96	92	97	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
A	34	A3-11 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE TOLERANCE.	83	91	75	75	86	82	89	
A	35	A3-12 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE FAILURE RATE.	28	17	14	28	30	32	31	
A	36	A3-13 DO YOU MAKE DECISIONS IN WHICH YOU MUST DETERMINE HOW TWO OR MORE BATTERIES MUST BE CONNECTED TOGETHER TO	36	21	23	43	38	32	40	
A	37	A3-14 DO YOU USE OR REFER TO THE SCHEMATIC SYMBOLS WHICH REPRESENT BATTERIES, FUSES, CONDUCTORS, LAMPS, OR SWITCHES	93	96	88	91	96	91	99	
A	38	A3-15 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES RESISTIVE CIRCUITS.	52	51	55	51	58	52	51	
A	39	A3-16 DO YOU CALCULATE TOTAL CURRENT FOR SERIES RESISTIVE CIRCUITS.	44	41	48	46	47	41	43	
A	40	A3-17 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES RESISTIVE CIRCUITS.	48	44	50	49	54	45	44	
A	41	A3-18 DO YOU CALCULATE POWER DISSIPATION FOR SERIES RESISTIVE CIRCUITS.	36	34	38	33	40	37	37	
A	42	A3-19 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES PARALLEL RESISTIVE CIRCUITS.	48	51	52	46	54	48	49	
A	43	A3-20 DO YOU CALCULATE TOTAL CURRENT FOR SERIES PARALLEL RESISTIVE CIRCUITS.	42	41	50	43	46	39	40	
A	44	A3-21 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES PARALLEL RESISTIVE CIRCUITS.	45	43	50	46	52	42	40	
A	45	A3-22 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR SERIES PARALLEL RESISTIVE CIRCUITS.	37	37	46	39	40	35	33	
A	46	A3-23 DO YOU CALCULATE POWER DISSIPATION FOR SERIES PARALLEL RESISTIVE CIRCUITS.	34	31	38	32	38	33	34	
A	47	A3-24 DO YOU CALCULATE TOTAL RESISTANCE FOR PARALLEL RESISTIVE CIRCUITS.	48	49	54	47	54	45	49	
A	48	A3-25 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RESISTIVE CIRCUITS.	42	41	48	43	45	38	40	
A	49	A3-26 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR PARALLEL RESISTIVE CIRCUITS.	44	40	50	47	49	40	40	
A	50	A3-27 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR PARALLEL RESISTIVE CIRCUITS.	37	34	46	40	40	33	33	
A	51	A3-28 DO YOU CALCULATE POWER DISSIPATION FOR PARALLEL RESISTIVE CIRCUITS.	33	31	38	33	37	31	31	
B	52	B1-01 DO YOU MEASURE RESISTANCE.	98	100	95	98	99	96	100	
B	53	B1-02 DO YOU REPAIR OHMMETERS.	10	11	9	8	13	8	11	
B	54	B1-03 DO YOU MEASURE VOLTAGE.	98	100	95	98	99	97	100	
B	55	B1-04 DO YOU REPAIR VOLTMETERS.	9	11	9	6	14	7	10	MULTIMETER USES
B	56	B1-05 DO YOU REPAIR AMMETERS.	7	9	5	6	10	6	6	
B	57	B1-06 DO YOU MEASURE CURRENT.	81	77	80	82	79	83	89	
B	58	B1-07 DO YOU USE MULTIMETERS.	97	100	95	98	98	96	100	
B	59	B1-08 DO YOU DIRECTLY USE A QUANTITY OF CHARGE CALLED A COULOMB.	6	3	5	4	6	10	9	
B	60	B1-09 DO YOU READ SCHEMATICS.	97	99	96	96	99	96	99	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
B	61	B2-01 DO YOU USE OR REFER TO THE TERM EFFECTIVE VOLTAGE (RMS).	85	87	82	84	90	81	91	
B	62	B2-02 DO YOU USE OR REFER TO THE TERM PEAK TO PEAK VOLTAGE.	81	87	82	82	81	79	84	ALTERNATING CURRENT
B	63	B2-03 DO YOU USE OR REFER TO THE TERM AVERAGE VOLTAGE (DC).	80	84	71	84	84	72	86	
B	64	B2-04 DO YOU USE OR REFER TO THE TERM WAVE LENGTH.	58	54	63	60	62	52	63	
B	65	B2-05 DO YOU USE OR REFER TO THE TERM FREQUENCY.	93	97	88	94	94	92	94	
B	66	B2-06 DO YOU USE OR REFER TO THE TERM INSTANTANEOUS VALUE.	25	21	29	27	28	24	27	
B	67	B3-01 DO YOU WORK WITH INDUCTORS OR CIRCUITS CONTAINING INDUCTORS, CHOKES, OR CHOKE COILS IN YOUR PRESENT JOB.	84	87	77	80	86	81	91	
B	68	B3-02 DO YOU INSPECT INDUCTORS.	87	93	79	82	89	87	91	
B	69	B3-03 DO YOU CLEAN INDUCTORS.	75	79	55	75	76	74	76	
B	70	B3-04 DO YOU ADJUST INDUCTORS.	85	89	79	79	87	85	93	
B	71	B3-05 DO YOU REMOVE OR REPLACE INDUCTORS.	86	91	70	82	88	85	93	
B	72	B3-06 DO YOU USE OR REFER TO INDUCTANCE.	74	80	73	69	74	75	84	
B	73	B3-07 DO YOU USE OR REFER TO HENRIES.	53	66	57	53	53	48	64	
B	74	B3-08 DO YOU USE OR REFER TO INDUCTIVE REACTANCE.	53	59	63	55	54	48	60	INDUCTORS AND INDUCTIVE REACTANCE
B	75	B3-09 DO YOU USE OR REFER TO COPPER LOSS IN INDUCTORS.	9	4	14	8	8	8	14	
B	76	B3-10 DO YOU USE OR REFER TO HYSTERESIS LOSS IN INDUCTORS.	11	6	16	11	10	9	14	
B	77	B3-11 DO YOU USE OR REFER TO EDDY CURRENT LOSS IN INDUCTORS	10	4	14	10	11	6	13	
B	78	B3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTANCE IS PROPORTIONAL TO THE SQUARE OF THE NUMBER OF	11	4	20	12	10	11	20	
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	10	6	13	8	10	10	17	
B	80	B3-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS INVERSELY PROPORTIONAL TO ITS	11	10	14	12	11	10	16	
B	81	B3-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE	11	9	14	9	14	9	16	
B	82	B3-16 DO YOU CALCULATE INDUCTANCE FOR PARTICULAR INDUCTORS USING FORMULAS.	8	6	13	7	9	7	9	
B	83	B3-17 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTANCE IN SERIES.	14	6	25	14	15	14	17	
B	84	B3-18 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN PARALLEL.	14	7	23	14	15	14	17	
B	85	B3-19 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES-PARALLEL CIRCUITS.	14	6	23	14	14	14	17	
B	86	B3-20 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LAGS VOLTAGE IN AC INDUCTOR CIRCUITS.	27	29	45	26	28	29	34	
B	87	B3-21 DO YOU CALCULATE INDUCTIVE REACTANCE.	16	10	39	18	15	12	17	
B	88	B3-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTIVE REACTANCE IS DIRECTLY PROPORTIONAL TO FREQUENCY.	28	29	52	29	30	25	31	
B	89	B3-23 DO YOU WORK WITH POWER INDUCTORS.	50	54	41	49	53	44	63	
B	90	B3-24 DO YOU WORK WITH AUDIO FREQUENCY INDUCTORS.	72	77	71	68	73	73	86	
B	91	B3-25 DO YOU WORK WITH RADIO FREQUENCY INDUCTORS.	79	84	77	71	81	79	94	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007
C	92	C1-01 DO YOU WORK WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS IN YOUR PRESENT JOB.	87	93	73	86	90	84	90
C	93	C1-02 DO YOU INSPECT CAPACITORS.	91	96	79	88	96	88	96
C	94	C1-03 DO YOU CLEAN CAPACITORS.	82	87	59	81	89	79	90
C	95	C1-04 DO YOU ADJUST CAPACITORS.	89	96	79	86	93	86	97
C	96	C1-05 DO YOU TEST CAPACITORS.	76	87	59	75	78	71	86
C	97	C1-06 DO YOU DISCHARGE CAPACITORS.	72	74	61	74	75	68	86
C	98	C1-07 DO YOU REMOVE OR REPLACE CAPACITORS.	91	96	79	90	94	88	97
C	99	C1-08 DO YOU USE OR REFER TO DISTRIBUTED CAPACITANCE.	17	17	29	14	19	14	24
C	100	C1-09 DO YOU USE OR REFER TO ORBITAL STRESS OF ELECTRONS IN A DIELECTRIC.	4	7	7	5	3	4	7
C	101	C1-10 DO YOU USE OR REFER TO FARADS, MICROFARADS, OR PICOFARADS.	79	87	75	75	85	73	81
C	102	C1-11 DO YOU USE OR REFER TO CAPACITANCE.	82	90	77	76	86	80	90
C	103	C1-12 DO YOU USE OR REFER TO DIELECTRIC CONSTANT	17	16	30	18	17	13	20
C	104	C1-13 DO YOU USE OR REFER TO WORKING VOLTAGE RATING OF CAPACITORS	60	69	63	57	64	48	76
C	105	C1-14 DO YOU USE OR REFER TO CAPACITIVE REACTANCE	42	43	54	41	40	38	50
C	106	C1-15 DO YOU USE OR REFER TO CAPACITOR COLOR CODES	44	47	39	44	47	33	64
C	107	C1-16 DO YOU WORK WITH CAPACITORS IN DC CIRCUITS	89	94	86	86	92	85	94
C	108	C1-17 DO YOU WORK WITH CAPACITORS IN AC CIRCUITS	89	90	86	87	93	86	96
C	109	C1-18 DO YOU WORK WITH CAPACITORS IN CIRCUITS WITH BOTH DC AND AC	85	86	80	81	89	84	94
C	110	C1-19 DO YOU WORK WITH CAPACITORS IN DON'T REMEMBER WHICH CIRCUITS	16	16	9	18	17	12	21
C	111	C1-20 DO YOU CALCULATE CAPACITANCE FOR PARTICULAR CAPACITORS USING FORMULAS	10	11	16	11	10	9	11
C	112	C1-21 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS DIRECTLY PROPORTIONAL TO THE	11	10	18	11	10	9	21
C	113	C1-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS INVERSELY PROPORTIONAL TO	14	14	23	11	13	11	24
C	114	C1-23 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES	21	21	36	21	23	20	19
C	115	C1-24 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN PARALLEL	21	20	36	21	24	20	19
C	116	C1-25 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES-PARALLEL CIRCUITS	19	19	34	18	22	18	16
C	117	C1-26 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT DOES NOT FLOW THROUGH CAPACITORS, IT ONLY APPEARS TO DO SO	34	30	41	30	34	35	46
C	118	C1-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEADS VOLTAGE IN AC CAPACITOR CIRCUITS	26	23	43	23	25	24	39
C	119	C1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITIVE REACTANCE IS INVERSELY PROPORTIONAL TO	26	23	46	25	27	25	30
C	120	C1-29 DO YOU CALCULATE CAPACITIVE REACTANCE	15	10	30	15	14	15	16

CAPACITORS AND
CAPACITIVE REACTANCE

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		Dy-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
C 121	C1-30	DO YOU WORK WITH ROTOR-STATOR (VARIABLE) CAPACITORS	86	91	80	80	90	84	96	
C 122	C1-31	DO YOU WORK WITH COMPRESSION (TRIMMER) CAPACITORS	84	90	82	76	89	82	94	
C 123	C1-32	DO YOU WORK WITH ELECTROLYTIC (FIXED) CAPACITORS	87	91	82	84	90	84	96	
C 124	C1-33	DO YOU WORK WITH PAPER (FIXED) CAPACITORS	80	86	77	75	84	75	90	
C 125	C1-34	DO YOU WORK WITH MICA (FIXED) CAPACITORS	82	89	77	80	87	75	90	
C 126	C1-35	DO YOU WORK WITH CERAMIC (FIXED) CAPACITORS	87	90	82	84	91	83	97	
C 127	C1-36	DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF CAPACITORS	15	13	11	17	13	19	13	
C 128	C2-01	DO YOU WORK WITH TRANSFORMERS IN YOUR PRESENT JOB	78	86	75	76	84	72	84	
C 129	C2-02	DO YOU INSPECT TRANSFORMERS	82	90	70	80	87	78	91	
C 130	C2-03	DO YOU CLEAN TRANSFORMERS	64	70	50	66	71	52	70	
C 131	C2-04	DO YOU ADJUST TRANSFORMERS	56	63	48	55	66	46	64	
C 132	C2-05	DO YOU TROUBLESHOOT TRANSFORMERS	74	79	63	70	78	70	89	TRANSFORMERS
C 133	C2-06	DO YOU REMOVE OR REPLACE COMPLETE TRANSFORMERS	82	91	71	78	87	76	93	
C 134	C2-07	DO YOU REMOVE OR REPLACE TRANSFORMER PARTS, SUCH AS THE PRIMARY WINDING	10	11	9	11	9	10	17	
C 135	C2-08	DO YOU MAKE A DISTINCTION BETWEEN MUTUAL INDUCTION AND MUTUAL INDUCTANCE (M)	6	4	9	6	5	4	14	
C 136	C2-09	DO YOU USE THE SYMBOL FOR MUTUAL INDUCTANCE, M	6	4	11	6	5	5	11	
C 137	C2-10	DO YOU REFER TO OR USE THE COEFFICIENT OF COUPLING WHEN WORKING WITH TRANSFORMERS	9	9	14	8	10	9	11	
C 138	C2-11	DO YOU CALCULATE TURNS RATIOS FOR TRANSFORMERS USING CURRENT OR VOLTAGE RATIOS	12	13	21	11	10	9	23	
C 139	C2-12	DO YOU REFER TO REFLECTED IMPEDANCE WHEN WORKING WITH TRANSFORMERS	8	13	16	7	7	8	13	
C 140	C2-13	DO YOU CALCULATE IMPEDANCE INTERACTIONS FOR TRANSFORMERS	6	4	13	6	5	5	11	
C 141	C2-14	DO YOU WORK WITH AUTOTRANSFORMERS	42	37	52	42	41	37	57	
C 142	C2-15	DO YOU WORK WITH POWER TRANSFORMERS	72	81	73	70	77	63	83	
C 143	C2-16	DO YOU WORK WITH AUDIO TRANSFORMERS	74	81	73	70	79	68	87	
C 144	C2-17	DO YOU WORK WITH RADIO FREQUENCY TRANSFORMERS	70	74	70	66	76	62	90	
C 145	C2-18	DO YOU WORK WITH DON'T REMEMBER WHAT TYPE OF TRANSFORMERS	19	20	4	22	19	23	16	
C 146	C2-19	DO YOU CHECK TRANSFORMERS FOR OPEN WINDINGS BY MEASURING RESISTANCE	76	89	71	72	78	69	94	
C 147	C2-20	DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING RESISTANCE	70	77	68	70	72	62	84	
C 148	C2-21	DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING OUTPUT VOLTAGES	67	79	66	62	71	60	80	
C 149	C2-22	DO YOU MEASURE RESISTANCE OF TRANSFORMER WINDINGS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR	24	27	27	25	27	20	26	
C 150	C2-23	DO YOU MEASURE OUTPUT VOLTAGE OF TRANSFORMERS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-	40	39	46	41	41	35	57	
C 151	C2-24	DO YOU REFER TO BASIC TRANSFORMER SCHEMATIC SYMBOLS FOR TRANSFORMERS	80	87	75	74	85	76	91	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
C 152	C2-25 DO YOU REFER TO MULTIPLE SECONDARY-WINDINGS SCHEMATIC SYMBOLS FOR TRANSFORMERS	71	79	68	67	75	68	80	
C 153	C2-26 DO YOU REFER TO MULTIPLE TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS	73	83	70	69	78	69	87	
C 154	C2-27 DO YOU REFER TO CENTER TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS	77	87	75	73	81	74	87	
C 155	C2-28 DO YOU REFER TO AIR CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS	55	60	48	49	60	52	67	
C 156	C2-29 DO YOU REFER TO IRON CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS	59	61	54	54	65	53	71	
C 157	C2-30 DO YOU REFER TO COMBINATIONS OF THE ABOVE SCHEMATIC SYMBOLS FOR TRANSFORMERS	65	79	59	61	68	57	77	
C 158	C2-31 DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING	26	29	39	24	27	27	29	
C 159	C2-32 DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN TRANSFORMERS YOU WORK WITH	27	23	29	23	32	28	29	
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 RATIO	21	27	29	21	19	19	30	
C 161	C2-34 DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN RATIOS FOR TRANSFORMERS	37	39	46	33	37	34	53	
C 162	C2-35 DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS USING TURNS RATIOS	13	11	23	12	15	12	16	
C 163	C2-36 DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS USING TURNS RATIOS	11	10	18	10	13	8	13	
C 164	C2-37 DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH THREE PHASE TRANSFORMERS	55	59	55	50	57	53	76	
C 165	C2-38 DO YOU INSPECT THREE PHASE TRANSFORMERS	52	56	39	51	55	47	73	
C 166	C2-39 DO YOU CLEAN OR LUBRICATE THREE PHASE TRANSFORMERS	30	37	20	35	33	30	41	
C 167	C2-40 DO YOU ADJUST THREE PHASE TRANSFORMERS	18	30	13	22	15	15	23	
C 168	C2-41 DO YOU TROUBLESHOOT THREE PHASE TRANSFORMERS	48	51	39	41	53	43	70	
C 169	C2-42 DO YOU REMOVE OR REPLACE COMPLETE THREE PHASE TRANSFORMERS	50	57	41	48	56	43	73	
C 170	C2-43 DO YOU REMOVE OR REPLACE THREE PHASE TRANSFORMER PARTS SUCH AS WINDINGS	6	9	5	7	5	6	10	
C 171	C3-01 DO YOU USE OR REFER TO PERMANENT MAGNETS	34	36	34	37	34	31	26	
C 172	C3-02 DO YOU USE OR REFER TO TEMPORARY MAGNETS	31	30	32	38	30	31	26	
C 173	C3-03 DO YOU USE OR REFER TO RETENTIVITY OF MAGNETIC MATERIALS	8	1	9	9	8	10	9	
C 174	C3-04 DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC MATERIALS	6	1	11	6	6	8	7	MAGNETISM
C 175	C3-05 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS	8	3	14	8	7	9	9	
C 176	C3-06 DO YOU USE OR REFER TO RESIDUAL MAGNETISM	12	6	18	16	11	13	11	
C 177	C3-07 DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE OR FLUX	17	10	30	20	15	16	19	
C 178	C3-08 DO YOU USE OR REFER TO WEBER'S THEORY OF MAGNETISM	5	1	9	6	5	5	9	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007
C	179	C3-09 DO YOU USE OR REFER TO DOMAIN THEORY OF MAGNETISM	5	3	5	5	5	5	9
C	180	C3-10 DO YOU USE OR REFER TO MAGNETIC INDUCTION	16	11	21	19	18	12	16
C	181	C3-11 DO YOU USE OR REFER TO FLUX DENSITY	11	6	20	15	10	10	10
C	182	C3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT FOR MAGNETIC POLES, LIKE POLES REPEL AND UNLIKE POLES ATTRACT	42	37	52	45	40	40	43
C	183	C3-13 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE DIRECTION OF MAGNETIC FIELDS ABOUT STRAIGHT WIRES	16	9	25	16	14	22	20
C	184	C3-14 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE NORTH POLE OF A CURRENT CARRYING COIL	14	6	27	15	10	18	16
D	185	D1-01 DO YOU WORK WITH RC, LR, RCL CIRCUITS IN YOUR PRESENT JOB	67	73	66	65	68	63	79
D	186	D1-02 DO YOU USE OR REFER TO VECTORS WHEN WORKING WITH RCL CIRCUITS	10	3	20	10	14	9	10
D	187	D1-03 DO YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN WORKING WITH RCL CIRCUITS	7	4	7	8	6	7	7
D	188	D1-04 DO YOU USE OR REFER TO SINE WHEN WORKING WITH RCL CIRCUITS	8	7	16	9	10	6	10
D	189	D1-05 DO YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL CIRCUITS	8	9	14	8	8	6	9
D	190	D1-06 DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL CIRCUITS	7	4	13	8	8	6	7
D	191	D1-07 DO YOU USE OR REFER TO WATTS WHEN WORKING WITH RCL CIRCUITS	57	60	54	54	58	54	76
D	192	D1-08 DO YOU USE OR REFER TO TRUE POWER (PT) WHEN WORKING WITH RCL CIRCUITS	24	17	32	25	28	24	27
D	193	D1-09 DO YOU USE OR REFER TO MAXIMUM POWER (PM) WHEN WORKING WITH RCL CIRCUITS	28	29	36	27	31	27	34
D	194	D1-10 DO YOU USE OR REFER TO AVERAGE POWER (PAVE) WHEN WORKING WITH RCL CIRCUITS	26	31	36	25	27	24	30
D	195	D1-11 DO YOU USE OR REFER TO APPARENT POWER (PA) WHEN WORKING WITH RCL CIRCUITS	18	19	23	18	19	18	20
D	196	D1-12 DO YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING WITH RCL CIRCUITS	15	13	23	16	16	14	17
D	197	D1-13 DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN WORKING WITH RCL CIRCUITS	57	64	59	51	57	52	74
D	198	D1-14 DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH RCL CIRCUITS	61	60	64	59	63	56	76
D	199	D1-15 DO YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH RCL CIRCUITS	63	64	63	62	62	57	84
D	200	D1-16 DO YOU USE OR REFER TO RESONANT FREQUENCY WHEN WORKING WITH RCL CIRCUITS	62	64	66	59	63	56	81
D	201	D1-17 DO YOU USE OR REFER TO HALF POWER POINTS WHEN WORKING WITH RCL CIRCUITS	21	16	25	21	21	20	23
D	202	D1-18 DO YOU USE OR REFER TO BANDPASS REGION WHEN WORKING WITH RCL CIRCUITS	40	29	48	40	45	35	49
D	203	D1-19 DO YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH RCL CIRCUITS	23	23	34	20	26	21	29

RCL CIRCUITS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007
D 204	D1-20 DO YOU USE OR REFER TO TANK CIRCUITS WHEN WORKING WITH RCL CIRCUITS	62	71	63	55	61	59	84
D 205	D1-21 DO YOU DETERMINE VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS	5	4	11	5	5	5	9
D 206	D1-22 DO YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS	7	4	18	5	7	5	9
D 207	D1-23 DO YOU CALCULATE TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS	10	11	16	9	10	9	13
D 208	D1-24 DO YOU CALCULATE PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS	5	6	13	5	5	5	7
D 209	D1-25 DO YOU CALCULATE TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS	10	13	21	9	10	8	14
D 210	D1-26 DO YOU CALCULATE IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS	5	4	11	6	6	5	7
D 211	D1-27 DO YOU CALCULATE APPARENT POWER (PA) FOR SERIES RCL CIRCUITS	6	7	14	5	7	6	9
D 212	D1-28 DO YOU CALCULATE TRUE POWER (PT) FOR SERIES RCL CIRCUITS	8	7	18	5	9	6	11
D 213	D1-29 DO YOU CALCULATE POWER FACTORS (PF) FOR SERIES RCL CIRCUITS	6	4	16	4	8	5	10
D 214	D1-30 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RCL CIRCUITS	9	10	21	9	9	8	9
D 215	D1-31 DO YOU CALCULATE IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS	5	6	11	4	5	5	7
D 216	D1-32 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING THE ASSUMED VOLTAGE METHOD	6	6	16	6	5	5	7
D 217	D1-33 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING OHM'S LAW	10	11	23	10	10	10	13
D 218	D1-34 DO YOU CHECK CAPACITORS USING OHMMETERS	69	70	69	60	68	57	79
D 219	D1-35 DO YOU CHECK CAPACITORS USING SUBSTITUTION	53	53	43	51	57	51	66
D 220	D1-36 DO YOU CHECK INDUCTORS USING OHMMETERS	63	69	68	61	64	57	80
D 221	D1-37 DO YOU CHECK INDUCTORS USING SUBSTITUTION	49	49	43	49	51	47	61
D 222	D1-38 DO YOU USE OR REFER TO THE GENERAL RULE THAT THETA= 0, PF = 1, AND PA = PT FOR RESONANT CIRCUITS	4	4	5	4	4	3	10
D 223	D1-39 DO YOU CALCULATE RESONANT FREQUENCIES FOR RCL CIRCUITS	13	14	32	12	11	14	14
D 224	D1-40 DO YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE RESONANT	25	27	39	20	25	22	33
D 225	D1-41 DO YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT RESONANT	21	19	34	17	22	20	30
D 226	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	20	16	41	19	18	19	21
D 227	D1-43 DO YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO Q	17	20	34	17	16	14	19
D 228	D1-44 DO YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE, CAPACITANCE, OR INDUCTANCE WILL AFFECT CURRENT OR PHASE	13	13	30	10	13	9	23

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
C	179	C3-09 DO YOU USE OR REFER TO DOMAIN THEORY OF MAGNETISM	5	3	5	5	5	5	9	
C	180	C3-10 DO YOU USE OR REFER TO MAGNETIC INDUCTION	16	11	21	19	18	12	16	
C	181	C3-11 DO YOU USE OR REFER TO FLUX DENSITY	11	6	20	15	10	10	10	
C	182	C3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT FOR MAGNETIC POLES, LIKE POLES REPEL AND UNLIKE POLES ATTRACT	42	37	52	45	40	40	43	
C	183	C3-13 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE DIRECTION OF MAGNETIC FIELDS ABOUT STRAIGHT WIRES	16	9	25	16	14	22	20	
C	184	C3-14 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE NORTH POLE OF A CURRENT CARRYING COIL	14	6	27	15	10	18	16	
D	185	D1-01 DO YOU WORK WITH RC, LR, RCL CIRCUITS IN YOUR PRESENT JOB	67	73	66	65	68	63	79	
D	186	D1-02 DO YOU USE OR REFER TO VECTORS WHEN WORKING WITH RCL CIRCUITS	10	3	20	10	14	9	10	
D	187	D1-03 DO YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN WORKING WITH RCL CIRCUITS	7	4	7	8	6	7	7	
D	188	D1-04 DO YOU USE OR REFER TO SINE WHEN WORKING WITH RCL CIRCUITS	8	7	16	9	10	6	10	RCL CIRCUITS
D	189	D1-05 DO YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL CIRCUITS	8	9	14	8	8	6	9	
D	190	D1-06 DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL CIRCUITS	7	4	13	8	8	6	7	
D	191	D1-07 DO YOU USE OR REFER TO WATTS WHEN WORKING WITH RCL CIRCUITS	57	60	54	54	58	54	76	
D	192	D1-08 DO YOU USE OR REFER TO TRUE POWER (PT) WHEN WORKING WITH RCL CIRCUITS	24	17	32	25	28	24	27	
D	193	D1-09 DO YOU USE OR REFER TO MAXIMUM POWER (PM) WHEN WORKING WITH RCL CIRCUITS	28	29	36	27	31	27	34	
D	194	D1-10 DO YOU USE OR REFER TO AVERAGE POWER (PAVE) WHEN WORKING WITH RCL CIRCUITS	26	31	36	25	27	24	30	
D	195	D1-11 DO YOU USE OR REFER TO APPARENT POWER (PA) WHEN WORKING WITH RCL CIRCUITS	18	19	23	18	19	18	20	
D	196	D1-12 DO YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING WITH RCL CIRCUITS	15	13	23	16	16	14	17	
D	197	D1-13 DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN WORKING WITH RCL CIRCUITS	57	64	59	51	57	52	74	
D	198	D1-14 DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH RCL CIRCUITS	61	60	64	59	63	56	76	
D	199	D1-15 DO YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH RCL CIRCUITS	63	64	63	62	62	57	84	
D	200	D1-16 DO YOU USE OR REFER TO RESONANT FREQUENCY WHEN WORKING WITH RCL CIRCUITS	62	64	66	59	63	56	81	
D	201	D1-17 DO YOU USE OR REFER TO HALF POWER POINTS WHEN WORKING WITH RCL CIRCUITS	21	18	25	21	21	20	23	
D	202	D1-18 DO YOU USE OR REFER TO BANDPASS REGION WHEN WORKING WITH RCL CIRCUITS	40	29	48	40	45	35	49	
D	203	D1-19 DO YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH RCL CIRCUITS	23	23	34	20	26	21	29	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007
D 204	D1-20 DO YOU USE OR REFER TO TANK CIRCUITS WHEN WORKING WITH RCL CIRCUITS	62	71	63	55	61	59	84
D 205	D1-21 DO YOU DETERMINE VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS	5	4	11	5	5	5	9
D 206	D1-22 DO YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS	7	4	18	5	7	5	9
D 207	D1-23 DO YOU CALCULATE TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS	10	11	16	9	10	9	13
D 208	D1-24 DO YOU CALCULATE PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS	5	6	13	5	5	5	7
D 209	D1-25 DO YOU CALCULATE TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS	10	13	21	9	10	8	14
D 210	D1-26 DO YOU CALCULATE IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS	5	4	11	6	6	5	7
D 211	D1-27 DO YOU CALCULATE APPARENT POWER (PA) FOR SERIES RCL CIRCUITS	6	7	14	5	7	6	9
D 212	D1-28 DO YOU CALCULATE TRUE POWER (PT) FOR SERIES RCL CIRCUITS	8	7	18	5	9	6	11
D 213	D1-29 DO YOU CALCULATE POWER FACTORS (PF) FOR SERIES RCL CIRCUITS	6	4	16	4	8	5	10
D 214	D1-30 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RCL CIRCUITS	9	10	21	9	9	8	9
D 215	D1-31 DO YOU CALCULATE IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS	5	6	11	4	5	5	7
D 216	D1-32 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING THE ASSUMED VOLTAGE METHOD	6	6	16	6	5	5	7
D 217	D1-33 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING OHM'S LAW	10	11	23	10	10	10	13
D 218	D1-34 DO YOU CHECK CAPACITORS USING OHMMETERS	69	70	64	60	68	57	79
D 219	D1-35 DO YOU CHECK CAPACITORS USING SUBSTITUTION	53	53	43	51	57	51	66
D 220	D1-36 DO YOU CHECK INDUCTORS USING OHMMETERS	63	69	68	61	64	57	80
D 221	D1-37 DO YOU CHECK INDUCTORS USING SUBSTITUTION	49	49	43	49	51	47	61
D 222	D1-38 DO YOU USE OR REFER TO THE GENERAL RULE THAT THETA= 0, PF = 1, AND PA = PT FOR RESONANT CIRCUITS	4	4	5	4	4	3	10
D 223	D1-39 DO YOU CALCULATE RESONANT FREQUENCIES FOR RCL CIRCUITS	13	14	32	12	11	14	14
D 224	D1-40 DO YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE RESONANT	25	27	39	20	25	22	33
D 225	D1-41 DO YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT RESONANT	21	19	34	17	22	20	30
D 226	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	20	16	41	19	18	19	21
D 227	D1-43 DO YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO Q	17	20	34	17	16	14	19
D 228	D1-44 DO YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE, CAPACITANCE, OR INDUCTANCE WILL AFFECT CURRENT OR PHASE	13	13	30	10	13	9	23

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
D 229	D2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH, USE, OR REFER TO SERIES OR PARALLEL RESONANT CIRCUITS OR TIME CONSTANTS	33	26	45	32	32	31	43	
D 230	D2-02 DO YOU WORK WITH, USE, OR REFER TO TIME CONSTANTS	18	10	29	17	17	19	27	
D 231	D2-03 DO YOU WORK WITH, USE, OR REFER TO AVAILABLE VOLTAGE	14	11	18	13	13	16	19	SERIES AND PARALLEL RESONANCE (TIME CONSTANTS)
D 232	D3-04 DO YOU WORK WITH, USE, OR REFER TO TRANSIENT INTERVALS	10	6	20	9	11	11	11	
D 233	D2-05 DO YOU USE OR REFER TO THE GENERAL RULE THAT A CAPACITOR IS FULLY CHARGED (OR DISCHARGED) AFTER FIVE (5)	13	7	25	13	12	10	17	
D 234	D2-06 DO YOU USE OR REFER TO UNIVERSAL TIME CONSTANT CHARTS	5	4	11	5	5	4	7	
D 235	D2-07 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CIRCUIT CURRENT OR COMPONENT VOLTAGES AFTER A SPECIFIC	5	6	11	5	4	5	10	
D 236	D2-08 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE THE TIME REQUIRED FOR CIRCUIT CURRENT OR COMPONENT VOLTAGES TO	5	4	11	5	3	5	7	
D 237	D2-09 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE COMPONENT VALUES REQUIRED FOR CIRCUIT CURRENT AND	5	4	11	4	5	5	7	
D 238	D2-10 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT IN LR CIRCUITS REACHES ITS MINIMUM VALUE (OR ZERO) AFTER	8	6	11	6	7	7	13	
D 239	D3-01 DO YOU WORK WITH CIRCUITS USED AS FILTERS IN YOUR PRESENT JOB	80	89	79	72	83	75	93	
D 240	D3-02 DO YOU INSPECT FILTER CIRCUITS	79	81	71	74	82	76	91	
D 241	D3-03 DO YOU CLEAN FILTER CIRCUITS	63	73	46	62	68	55	71	
D 242	D3-04 DO YOU ALIGN OR ADJUST FILTER CIRCUITS	62	73	71	61	65	52	71	
D 243	D3-05 DO YOU TROUBLESHOOT TO THE FILTER CIRCUIT LEVEL	72	77	68	65	74	71	90	
D 244	D3-06 DO YOU TROUBLESHOOT TO COMPONENT PARTS	65	67	59	61	68	63	77	
D 245	D3-07 DO YOU REMOVE OR REPLACE THE COMPLETE FILTER CIRCUIT	77	84	70	72	79	74	89	FILTERS
D 246	D3-08 DO YOU REMOVE OR REPLACE FILTER CIRCUIT COMPONENT PARTS	62	66	43	56	64	63	80	
D 247	D3-09 DO YOU WORK WITH LOW PASS FILTERS	75	79	68	70	80	71	86	
D 248	D3-10 DO YOU WORK WITH HIGH PASS FILTERS	71	71	68	70	75	64	83	
D 249	D3-11 DO YOU WORK WITH BANDPASS FILTERS	76	80	68	73	80	71	87	
D 250	D3-12 DO YOU WORK WITH BAND-REJECT FILTERS	58	54	59	59	60	49	70	
D 251	D3-13 DON'T REMEMBER WHICH TYPE OF FILTER YOU WORK WITH	18	19	11	14	22	18	19	
D 252	D3-14 DO YOU WORK WITH L-SECTION FILTER CONFIGURATION	41	41	45	40	42	36	56	
D 253	D3-15 DO YOU WORK WITH T-SECTION FILTER CONFIGURATION	41	41	41	39	43	37	54	
D 254	D3-16 DO YOU WORK WITH PI-SECTION FILTER CONFIGURATION	37	37	38	36	39	33	54	
D 255	D3-17 DON'T REMEMBER WHICH TYPE FILTER CONFIGURATION	36	43	23	28	39	38	33	
D 256	D3-18 DO THE FILTERS YOU WORK WITH USE PARALLEL RESONANT CIRCUITS	48	53	54	43	52	41	61	
D 257	D3-19 DO THE FILTERS YOU WORK WITH USE SERIES-PARALLEL CIRCUITS	48	49	54	43	51	42	64	
D 258	D3-20 DO THE FILTERS YOU WORK WITH USE SERIES RESONANT CIRCUITS	47	50	54	44	51	39	59	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
D	259	D3-21 DON'T REMEMBER WHICH TYPE OF BASIC CIRCUIT	33	33	21	27	37	38	29	
D	260	D3-22 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CAPACITANCE OR INDUCTANCE VALUES REQUIRED FOR SPECIFIC	8	4	11	7	8	9	10	
E	261	E1-01 DO YOU WORK WITH COUPLING DEVICES IN YOUR PRESENT JOB	73	71	68	69	79	69	84	
E	262	E1-02 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH RC	64	63	66	62	66	57	76	
E	263	E1-03 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH	64	60	59	65	68	59	71	
E	264	E1-04 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH	66	63	68	62	69	61	80	
E	265	E1-05 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM RC COUPLING	63	63	70	61	66	57	76	COUPLING
E	266	E1-06 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM IMPEDANCE COUPLING	63	63	61	63	67	57	73	
E	267	E1-07 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM TRANSFORMER COUPLING	66	67	68	60	69	61	77	
E	268	E1-08 DO YOU WORK WITH DIRECTLY COUPLED CIRCUITS	61	61	63	55	67	56	71	
E	269	E1-09 DO YOU WORK WITH CAPACITIVE-RESISTIVE COUPLED CIRCUITS	60	60	66	54	65	53	73	
E	270	E1-10 DO YOU WORK WITH CAPACITIVE-INDUCTIVE COUPLED CIRCUITS	58	57	59	53	65	52	71	
E	271	E1-11 DO YOU WORK WITH TRANSFORMER COUPLED CIRCUITS	62	59	66	56	66	57	77	
E	272	E1-12 DON'T REMEMBER WHICH TYPE OF COUPLING CIRCUITS	19	17	9	22	17	20	13	
E	273	E2-01 IN YOUR PRESENT JOB, DO YOU PERFORM SOLDERING TECHNIQUES OR INSPECT OR EVALUATE SOLDERED CONNECTIONS	93	97	86	94	95	89	97	
E	274	E2-02 DO YOU SELECT TYPE OF SOLDER TO USE	74	76	70	71	73	78	69	
E	275	E2-03 DO YOU ADD FLUX TO CONNECTIONS	89	91	73	88	91	90	94	
E	276	E2-04 DO YOU CLEAN CONNECTIONS USING SOLVENTS	76	76	68	72	76	79	84	
E	277	E2-05 DO YOU STRIP INSULATION FROM WIRES	95	96	84	95	96	95	100	
E	278	E2-06 DO YOU CONNECT OR DISCONNECT HEAT SINKS	89	94	80	87	90	89	100	
E	279	E2-07 DO YOU BEND OR SHAPE WIRES OR LEADS	95	97	84	95	97	94	100	
E	280	E2-08 DO YOU CUT WIRES	95	97	86	95	97	95	100	SOLDERING
E	281	E2-09 DO YOU FILE OR SHAPE SOLDERING IRON TIPS	80	83	71	79	83	76	86	
E	282	E2-10 DO YOU TIN SOLDERING IRON TIPS	95	97	82	94	96	95	99	
E	283	E2-11 DO YOU CLEAN SOLDERING IRON TIPS	94	96	84	94	97	93	99	
E	284	E2-12 DO YOU CLEAN ELECTRICAL SURFACES USING ERASERS	86	91	70	84	87	87	89	
E	285	E2-13 DO YOU TIN OR PRE-TIN CONDUCTORS	94	94	86	94	95	92	100	
E	286	E2-14 DO YOU INSPECT SOLDERED CONNECTIONS	95	96	84	95	97	94	100	
E	287	E2-15 DO YOU DESOLDER CONNECTIONS BY WICKING	66	71	61	64	69	64	67	
E	288	E2-16 DO YOU DESOLDER CONNECTIONS USING VACUUM DESOLDERING TOOLS	86	94	59	82	90	86	96	
E	289	E2-17 DO YOU CUT COMPONENT LEADS TO REMOVE COMPONENTS	77	83	77	76	83	73	77	
E	290	E2-18 DO YOU CRUSH COMPONENTS FOR REMOVAL	34	30	21	29	41	36	41	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
E	291	E2-19 DO YOU MAKE HARDWIRE CONNECTIONS	89	90	79	89	94	89	89	
E	292	E2-20 DO YOU MAKE PRINTED CIRCUIT BOARD CONNECTIONS	85	91	75	83	90	80	94	
E	293	E2-21 DO YOU SOLDER PASSIVE COMPONENTS SUCH AS RESISTORS OR CAPACITORS ON PRINTED CIRCUIT BOARDS	85	91	77	83	90	81	96	
E	294	E2-22 DO YOU SOLDER ACTIVE COMPONENTS SUCH AS SOLID-STATE DIODES OR TRANSISTORS ON PRINTED CIRCUIT BOARDS	83	89	73	80	87	79	94	
E	295	E3-01 DO YOU WORK WITH RELAYS ON YOUR PRESENT JOB	91	97	89	88	94	91	96	
E	296	E3-02 DO YOU ADJUST RELAYS	48	44	43	50	50	43	64	
E	297	E3-03 DO YOU CLEAN RELAYS	74	81	63	74	72	70	84	
E	298	E3-04 DO YOU INSPECT RELAYS	87	93	80	82	89	87	91	
E	299	E3-05 DO YOU REMOVE OR REPLACE COMPLETE RELAYS	91	97	82	88	94	90	97	
E	300	E3-06 DO YOU REMOVE OR REPLACE PARTS OR RELAYS	26	19	32	26	23	27	37	
E	301	E3-07 DO YOU TROUBLESHOOT RELAYS	88	91	86	83	90	86	96	
E	302	E3-08 DO YOU STRAIGHTEN RELAY CONTACTS	67	69	68	67	66	63	81	
E	303	E3-09 DO YOU PERFORM TASKS ON RELAY CONTACTS	65	77	61	69	56	63	77	RELAYS
E	304	E3-10 DO YOU PERFORM TASKS ON RELAY CORES	14	14	16	12	14	11	23	
E	305	E3-11 DO YOU PERFORM TASKS ON RELAY COILS	18	23	25	16	16	15	31	
E	306	E3-12 DO YOU PERFORM TASKS ON RELAY ARMATURES	26	31	29	23	21	26	34	
E	307	E3-13 DO YOU PERFORM TASKS ON RELAY SPRINGS	33	33	30	35	27	31	41	
E	308	E3-14 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY OPER (NO) SCHEMATIC SYMBOLS FOR RELAYS	76	87	64	74	81	72	87	
E	309	E3-15 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY CLOSED (NC) SCHEMATIC SYMBOLS FOR RELAYS	75	87	63	73	79	70	83	
E	310	E3-16 DO YOU USE OR REFER TO SINGLE POLE, DOUBLE THROW (SPDT) SCHEMATIC SYMBOLS FOR RELAYS	74	86	63	72	78	68	83	
E	311	E3-17 DO YOU USE OR REFER TO DOUBLE POLE, DOUBLE THROW (DPDT) SCHEMATIC SYMBOLS FOR RELAYS	73	86	66	71	78	69	81	
E	312	E3-18 DO YOU USE OR REFER TO OTHER RELAY SYMBOLS SCHEMATIC SYMBOLS FOR RELAYS	68	79	57	65	70	63	77	
E	313	E3-19 DO YOU CHECK ELECTRICAL CONTINUITY OF COILS BY MEASURING RESISTANCE	75	83	70	68	79	73	81	
F	314	F1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH MICROPHONES	88	94	75	92	85	88	94	
F	315	F1-02 DO YOU INSPECT MICROPHONES	83	86	59	89	81	82	90	
F	316	F1-03 DO YOU CLEAN MICROPHONES	63	73	43	79	61	57	63	
F	317	F1-04 DO YOU OPERATE MICROPHONES	89	94	73	93	86	90	96	
F	318	F1-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT	72	79	57	77	68	71	81	MICROPHONES
F	319	F1-06 DO YOU TROUBLESHOOT DOWN TO MICROPHONE PARTS	38	39	21	37	39	39	36	
F	320	F1-07 DO YOU REMOVE OR REPLACE COMPLETE MICROPHONES	87	94	61	93	83	86	93	
F	321	F1-08 DO YOU REMOVE OR REPLACE MICROPHONE PARTS	36	33	21	36	39	36	37	
F	322	F1-09 DO YOU PERFORM TASKS ON CARBON MICROPHONES	78	80	66	83	77	76	77	
F	323	F1-10 DO YOU PERFORM TASKS ON CAPACITOR MICROPHONES	12	14	13	13	13	11	14	
F	324	F1-11 DO YOU PERFORM TASKS ON CRYSTAL MICROPHONES	13	13	9	12	17	13	14	
F	325	F1-12 DO YOU PERFORM TASKS ON DYNAMIC MICROPHONES	78	84	64	82	78	73	84	
F	326	F1-13 DO YOU PERFORM TASKS ON VELOCITY RIBBON MICROPHONES	5	6	2	6	3	6	9	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
F 327	F2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH SPEAKERS	79	74	66	87	81	74	81	
F 328	F2-02 DO YOU INSPECT SPEAKERS	75	70	57	84	78	67	80	
F 329	F2-03 DO YOU CLEAN SPEAKERS	54	51	43	69	56	43	54	
F 330	F2-04 DO YOU OPERATE SPEAKERS	79	76	66	88	81	75	86	
F 331	F2-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT	70	74	59	76	72	61	74	SPEAKERS
F 332	F2-06 DO YOU TROUBLESHOOT DOWN TO SPEAKER PARTS	23	16	7	21	27	25	23	
F 333	F2-07 DO YOU REMOVE OR REPLACE COMPLETE SPEAKERS	76	74	59	86	79	67	83	
F 334	F2-08 DO YOU REMOVE OR REPLACE SPEAKER PARTS	18	10	7	16	23	18	16	
F 335	F2-09 DO YOU PERFORM ANY TASKS ON SPEAKER CONES	9	4	2	10	9	12	13	
F 336	F2-10 DO YOU PERFORM ANY TASKS ON SPEAKER SPIDERS	3	1	0	3	3	5	7	
F 337	F2-11 DO YOU PERFORM ANY TASKS ON SPEAKER FIELD COILS	6	1	0	7	8	9	9	
F 338	F2-12 DO YOU PERFORM ANY TASKS ON SPEAKER VOICE COILS	7	4	0	8	8	9	9	
F 339	F2-13 DO YOU PERFORM ANY TASKS ON SPEAKER PERMANENT MAGNETS	7	4	2	7	6	10	13	
F 340	F2-14 DO YOU PERFORM ANY TASKS ON SPEAKER ELECTROMAGNETS	7	1	2	7	7	7	13	
F 341	F2-15 DO YOU PERFORM ANY TASKS ON SPEAKER SOFT IRON CORES	5	1	0	5	5	5	9	
F 342	F3-01 DO YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB	84	94	75	81	79	86	96	
F 343	F3-02 DO YOU USE OSCILLOSCOPES TO PERFORM OPERATIONAL CHECKS	79	89	75	76	75	81	91	
F 344	F3-03 DO YOU USE OSCILLOSCOPES TO PERFORM ALIGNMENTS OR ADJUSTMENTS	79	91	77	75	76	82	91	
F 345	F3-04 DO YOU USE OSCILLOSCOPES TO TROUBLESHOOT ELECTRONIC CIRCUITS	75	89	70	75	72	76	83	
F 346	F3-05 DO YOU USE OSCILLOSCOPES TO MEASURE FREQUENCY	53	64	55	59	51	48	60	OSCILLOSCOPES
F 347	F3-06 DO YOU USE OSCILLOSCOPES TO MEASURE TIME	35	30	38	39	39	30	37	
F 348	F3-07 DO YOU USE OSCILLOSCOPES TO OBSERVE LISAJOUS PATTERNS	44	27	36	37	67	33	51	
F 349	F3-08 DO YOU USE OSCILLOSCOPES TO OBSERVE SIGNALS WHILE UTILIZING ATTENUATOR PROBES	70	83	66	71	62	74	81	
F 350	F3-09 DO YOU USE OSCILLOSCOPES TO MAKE FREQUENCY OR TIME MEASUREMENTS USING DELAY TIME MULTIPLIERS	25	24	27	28	25	26	27	
F 351	F3-10 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE	65	79	63	69	63	61	70	
F 352	F3-11 DO YOU USE OSCILLOSCOPES TO MEASURE OR OBSERVE SIGNALS AFTER FIRST ADJUSTING THE GAIN AND DC BAL CONTROLS	52	56	55	59	46	52	56	
F 353	F3-12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE	56	70	54	64	57	50	61	
G 354	G1-01 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT JOB	83	89	77	80	84	82	96	
G 355	G1-02 DO YOU INSPECT DIODES	83	84	71	81	84	84	96	
G 356	G1-03 DO YOU REMOVE OR REPLACE DIODES	83	87	71	82	84	83	97	
G 357	G1-04 DO YOU CHECK DIODES USING AN INSTRUMENT	78	83	75	76	76	78	90	
G 358	G1-05 DO YOU USE ENERGY LEVEL DIAGRAMS IN YOUR WORK WITH DIODES	4	1	9	5	4	5	7	SEMICONDUCTOR DIODES
G 359	G1-06 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES, TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE,	9	7	16	10	8	8	16	
G 360	G1-07 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR DIODES	16	16	18	18	16	11	21	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007
G 361	G1-08 DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES	50	53	45	46	52	47	71
G 362	G1-09 DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO OTHER ELECTRONIC COMPONENTS, SUCH AS RESISTORS, BASED ON	70	73	59	68	71	67	87
G 363	G1-10 DO YOU REFER TO OR DO YOU DETERMINE THE GENERAL EFFECTS OF DOPING ON CURRENT FLOW	10	10	18	8	9	13	10
G 364	G1-11 DO YOU USE OR REFER TO MEASUREMENTS OF FORWARD BIAS RESISTANCE	54	59	46	53	55	51	64
G 365	G1-12 DO YOU USE OR REFER TO DIODE COLOR CODING	33	27	16	38	38	29	46
G 366	G1-13 DO YOU USE OR REFER TO CENTRIFUGAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS	2	0	0	2	3	2	4
G 367	G1-14 DO YOU USE OR REFER TO CENTRIPETAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS	2	0	0	2	2	2	4
G 368	G1-15 DO YOU USE OR REFER TO DIODE NUMBERING SYSTEM, SUCH AS IN 538	60	63	54	59	62	59	76
G 369	G1-16 DO YOU USE OR REFER TO KINETIC ENERGY OF AN ELECTRON MOVING IN ORBIT	3	0	0	3	3	2	7
G 370	G1-17 DO YOU USE OR REFER TO POTENTIAL ENERGY OF AN ELECTRON MOVING IN ORBIT	3	0	2	3	3	2	7
G 371	G1-18 DO YOU USE OR REFER TO MEASUREMENTS OF REVERSE BIAS RESISTANCE	51	60	46	50	53	45	64
G 372	G1-19 DO YOU USE OR REFER TO NUMBER OF ELECTRONS IN A PARTICULAR SHELL OR ORBIT	4	0	9	5	3	2	9
G 373	G1-20 DO YOU USE OR REFER TO PERMISSIBLE ENERGY LEVELS OF AN ORBITING ELECTRON	3	0	7	3	3	3	6
G 374	G1-21 DO YOU USE OR REFER TO FORBIDDEN ENERGY LEVELS OF AN ORBITING ELECTRON	3	0	5	3	3	3	6
G 375	G1-22 DO YOU USE OR REFER TO VALENCE ELECTRONS (THOSE IN THE OUTERMOST SHELL)	4	0	7	5	4	3	7
G 376	G1-23 DO YOU USE OR REFER TO ATOMIC NUMBER (TOTAL NUMBER OF ELECTRONS IN ATOM)	4	0	7	5	4	2	6
G 377	G1-24 DO YOU USE OR REFER TO SYMBOLS ON THE DIODE WHICH INDICATE THE CATHODE END	71	76	64	65	70	71	86
G 378	G1-25 DO YOU NEED TO KNOW WHICH MATERIALS ARE USED IN THE CONSTRUCTION OF DIODES SUCH AS GERMANIUM OR SILICON	16	20	18	18	17	11	19
G 379	G1-26 DO YOU NEED TO KNOW THAT SEMICONDUCTORS HAVE NEGATIVE TEMPERATURE COEFFICIENTS OF RESISTANCE (AS TEMPERATURE	28	29	29	27	27	27	37
G 380	G1-27 DO YOU USE OR REFER TO PN JUNCTION DIODE CHARACTERISTIC CURVES, SUCH AS VOLTAGE - CURRENT	10	6	14	9	10	10	13
G 381	G1-28 DO YOU DETERMINE WHETHER PN JUNCTION DIODES ARE FORWARD BIASED OR REVERSE BIASED WHEN YOU READ OR	50	54	46	49	48	46	69
G 382	G1-29 DO YOU USE OR REFER TO VALENCE BAND IN SEMICONDUCTOR MATERIALS	4	0	13	6	3	3	6

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
G 383	G1-30 DO YOU USE OR REFER TO FORBIDDEN BAND IN SEMICONDUCTOR MATERIALS	3	0	9	5	2	2	6	
G 384	G1-31 DO YOU USE OR REFER TO CONDUCTION BAND IN SEMICONDUCTOR MATERIALS	4	0	9	6	3	4	7	
G 385	G1-32 DO YOU USE OR REFER TO COVALENT BONDING IN SEMICONDUCTOR MATERIALS	4	0	11	6	3	3	6	
G 386	G1-33 DO YOU USE OR REFER TO ELECTRON-HOLE PAIR CREATED IN SEMICONDUCTORS	5	4	14	4	3	5	7	
G 387	G1-34 DO YOU USE OR REFER TO ELECTRON FLOW OR HOLE FLOW IN SEMICONDUCTORS	13	13	16	9	11	14	19	
G 388	G1-35 DO YOU USE OR REFER TO DONOR IMPURITY IN SEMICONDUCTORS	5	3	14	7	4	2	9	
G 389	G1-36 DO YOU USE OR REFER TO ACCEPTOR IMPURITY IN SEMICONDUCTORS	5	3	16	5	4	3	9	
G 390	G1-37 DO YOU USE OR REFER TO P-TYPE SEMICONDUCTOR MATERIAL	23	21	29	23	23	24	23	
G 391	G1-38 DO YOU USE OR REFER TO N-TYPE SEMICONDUCTOR MATERIAL	23	24	27	22	22	24	23	
G 392	G1-39 DO YOU USE OR REFER TO MAJORITY CARRIERS IN SEMICONDUCTORS	6	3	16	7	5	6	7	
G 393	G1-40 DO YOU USE OR REFER TO MINORITY CARRIERS IN SEMICONDUCTORS	6	3	16	7	5	5	7	
G 394	G1-41 DO YOU USE OR REFER TO JUNCTION RECOMBINATION IN SEMICONDUCTORS	5	3	13	7	3	3	7	
G 395	G1-42 DO YOU USE OR REFER TO DEPLETION REGION IN SEMICONDUCTORS	9	6	18	11	7	7	10	
G 396	G1-43 DO YOU USE OR REFER TO RELATIONSHIP BETWEEN BARRIER WIDTH AND DIFFERENCE OF POTENTIAL	7	6	14	9	6	5	6	
G 397	G1-44 DO YOU USE OR REFER TO THE 10:1 BACK TO FRONT RESISTANCE RATIO FOR DIODES	54	59	45	53	58	47	73	
G 398	G1-45 DO YOU USE OR REFER TO BARRIER HEIGHT IN SEMICONDUCTORS	4	3	7	5	2	3	7	
G 399	G1-46 DO YOU USE OR REFER TO DIODE SUBSTITUTION INFORMATION	36	47	30	40	38	31	37	
G 400	G1-47 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD CURRENT DIODE RATINGS	15	16	20	15	17	12	20	
G 401	G1-48 DO YOU USE OR REFER TO PEAK RECURRENT FORWARD CURRENT DIODE RATINGS	13	16	16	14	14	10	19	
G 402	G1-49 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT DIODE RATINGS	15	19	16	14	17	12	20	
G 403	G1-50 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE DIODE RATINGS	19	23	23	18	22	16	20	
G 404	G2-01 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB.	83	91	82	82	82	83	94	
G 405	G2-02 DO YOU INSPECT TRANSISTORS	83	90	75	82	83	83	91	
G 406	G2-03 DO YOU REMOVE OR REPLACE TRANSISTORS	84	91	73	83	84	84	94	
G 407	G2-04 DO YOU CHECK TRANSISTORS USING AN INSTRUMENT	76	87	79	73	76	73	86	TRANSISTORS
G 408	G2-05 DO YOU USE OR REFER TO EMITTER - BASE (EB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	71	81	75	69	70	67	86	
G 409	G2-06 DO YOU USE OR REFER TO COLLECTOR - BASE (CB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	70	81	77	67	70	65	86	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	Dy-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
G 410	G2-07 DO YOU USE OR REFER TO EMITTER - COLLECTOR (EC) RESISTANCE MEASUREMENTS	70	83	77	67	69	67	86	
G 411	G2-08 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE EMITTER - BASE JUNCTION	19	20	23	23	15	19	20	
G 412	G2-09 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE COLLECTOR - BASE JUNCTION	18	20	23	22	15	18	19	
G 413	G2-10 DO YOU USE OR REFER TO THE PHYSICAL SIZE OF THE TRANSISTOR STRUCTURE (COLLECTOR, BASE AND EMITTER)	41	51	48	38	37	44	50	
G 414	G2-11 DO YOU USE OR REFER TO LEAKAGE CURRENT (ICBO) IN A TRANSISTOR	16	13	25	15	17	17	17	
G 415	G2-12 DO YOU USE OR REFER TO TRANSISTOR SCHEMATIC SYMBOLS	82	91	84	81	81	81	91	
G 416	G2-13 DO YOU USE OR REFER TO TRANSISTOR NOTATION SUCH AS Q1, Q2, Q3, ETC	82	91	82	81	81	81	91	
G 417	G2-14 DO YOU USE OR REFER TO TRANSISTOR SUBSTITUTION INFORMATION	51	64	48	56	54	46	46	
G 418	G2-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE TRANSISTOR BASE CURRENT IB IS NORMALLY SIGNIFICANTLY	25	23	23	24	25	25	26	
G 419	G2-16 DO YOU USE THE INFORMATION THAT THE EFFECT OF EMITTER BASE VOLTAGE ON BASE CURRENT IS THE CONTROLLING FACTOR FOR	34	37	39	33	31	32	40	
G 420	G2-17 DO YOU USE THE GENERAL RULE THAT LEAKAGE CURRENT (ICBO) IN A TRANSISTOR INCREASES AS TEMPERATURE INCREASES	17	16	21	15	18	17	20	
G 421	G2-18 DO YOU USE OR REFER TO TRANSISTOR CHARACTERISTIC CURVES	10	7	27	10	10	6	14	
G 422	G2-19 DO YOU USE OR REFER TO BETA TRANSISTOR GAINS	8	7	9	11	8	7	9	
G 423	G2-20 DO YOU USE OR REFER TO ALPHA TRANSISTOR GAINS	8	7	9	9	6	7	10	
G 424	G2-21 DO YOU USE OR REFER TO GAMMA TRANSISTOR GAINS	7	7	5	9	6	7	10	
G 425	G2-22 DO YOU CALCULATE BETA TRANSISTOR GAINS	3	1	5	5	3	3	4	
G 426	G2-23 DO YOU CALCULATE ALPHA TRANSISTOR GAINS	3	1	5	5	2	3	4	
G 427	G2-24 DO YOU CALCULATE GAMMA TRANSISTOR GAINS	3	1	4	5	2	3	4	
G 428	G3-01 DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR PRESENT JOB	73	81	71	69	74	71	89	
G 429	G3-02 DO YOU INSPECT TRANSISTOR AMPLIFIERS	72	77	68	67	73	73	84	
G 430	G3-03 DO YOU ALIGN OR ADJUST TRANSISTOR AMPLIFIERS	61	70	52	55	61	63	64	
G 431	G3-04 DO YOU TROUBLESHOOT TO THE AMPLIFIER CIRCUIT LEVEL	70	77	66	65	70	71	79	TRANSISTOR
G 432	G3-05 DO YOU TROUBLESHOOT TO AMPLIFIER COMPONENTS	64	69	61	59	64	63	76	AMPLIFIERS
G 433	G3-06 DO YOU REMOVE OR REPLACE THE COMPLETE AMPLIFIER	72	81	63	66	73	74	86	
G 434	G3-07 DO YOU REMOVE OR REPLACE AMPLIFIER COMPONENTS	63	69	48	59	65	61	80	
G 435	G3-08 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A CHANGE IN BASE	21	14	30	19	21	23	23	
G 436	G3-09 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN	9	7	14	8	10	12	6	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007
G 437	63-10 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A CHANGE IN BASE	21	14	29	18	21	29	19
G 438	63-11 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN	8	4	14	5	9	11	9
G 439	63-12 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN BASE CURRENT WHICH RESULTS FROM AN INPUT SIGNAL	19	16	30	15	19	22	16
G 440	63-13 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN	9	4	20	6	10	10	6
G 441	63-14 DO YOU USE THE LOAD-LINE METHOD OF ANALYSIS IN YOUR CIRCUIT ANALYSIS (THIS METHOD REQUIRES YOU TO PLOT A	4	1	7	4	3	4	6
G 442	63-15 DO YOU USE OR REFER TO THE OPERATING POINT Q (QUIESCENT POINT) FOR A TRANSISTOR	9	10	20	6	9	11	11
G 443	63-16 DO YOU CALCULATE THE SPECIFIC QUIESCENT POINT FOR A PARTICULAR TRANSISTOR	3	1	5	3	3	4	7
G 444	63-17 DO YOU MEASURE VOLTAGE GAIN USED IN THE COMMON EMITTER CONFIGURATION	38	36	34	36	40	37	49
G 445	63-18 DO YOU MEASURE CURRENT GAIN USED IN THE COMMON EMITTER CONFIGURATION	25	27	29	28	25	23	24
G 446	63-19 DO YOU MEASURE POWER GAIN USED IN THE COMMON EMITTER CONFIGURATION	29	30	25	30	29	29	30
G 447	63-20 DO YOU CALCULATE THE VOLTAGE GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE	4	3	4	3	4	4	7
G 448	63-21 DO YOU CALCULATE THE CURRENT GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE	4	3	5	3	5	3	7
G 449	63-22 DO YOU CALCULATE THE POWER GAIN FOR A SPECIFIC TRANSISTOR USING A FORMULA THAT IS, DO YOU MULTIPLY THE	4	3	4	3	4	4	6
G 450	63-23 DO YOU NEED TO KNOW THAT MORE COLLECTOR CURRENT IS GENERATED WITH LESS COLLECTOR VOLTAGE AS TEMPERATURE	8	7	11	6	10	6	11
G 451	63-24 DO YOU COMPUTE THE STATIC OPERATING POINT (Q) OF A TRANSISTOR AT DIFFERENT TEMPERATURES	3	3	5	4	2	4	6
G 452	63-25 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH	31	39	25	26	33	28	39
G 453	63-26 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH SELF-	32	37	25	28	33	31	40

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007
G 454	G3-27 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH	33	41	25	28	35	33	43
G 455	G3-28 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH	31	39	30	28	30	29	40
G 456	G3-29 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH	31	39	30	27	30	29	39
G 457	G3-30 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH	24	30	20	20	25	20	34
G 458	G3-31 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM EMITTER (SWAMPING) RESISTOR STABILIZATION	36	44	30	34	38	31	46
G 459	G3-32 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM SELF-BIAS STABILIZATION	38	41	30	34	41	33	47
G 460	G3-33 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THERMISTOR STABILIZATION	38	43	29	35	40	35	47
G 461	G3-34 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM FORWARD BIAS DIODE STABILIZATION	35	41	29	35	38	30	46
G 462	G3-35 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM REVERSE BIAS DIODE STABILIZATION	35	41	29	34	37	30	43
G 463	G3-36 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM DOUBLE DIODE STABILIZATION	27	33	20	25	30	22	36
G 464	G3-37 DO YOU IDENTIFY AMPLITUDE DISTORTION FOR TRANSISTOR CIRCUITS	42	53	41	39	37	43	50
G 465	G3-38 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF AMPLITUDE DISTORTION	44	47	45	44	40	44	53
G 466	G3-39 DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS	36	41	39	36	34	36	40
G 467	G3-40 DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS	23	27	29	25	23	19	21
G 468	G3-41 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF PHASE DISTORTION	23	26	29	25	23	18	24
G 469	G3-42 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF FREQUENCY DISTORTION	33	39	38	34	31	32	36
G 470	G3-43 DO YOU NEED TO KNOW THE DEGENERATIVE EFFECTS ON THE CIRCUIT CAUSED BY CHANGING EMITTER RESISTANCE FOR	15	13	25	14	13	14	20
G 471	G3-44 DO YOU DETERMINE THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS	20	23	25	18	19	20	20
G 472	G3-45 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	23	39	23	28	22	14	20
G 473	G3-46 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	60	73	50	57	59	54	71
G 474	G3-47 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY CIRCUITS	31	33	29	29	34	28	37
G 475	G3-48 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	32	33	30	28	37	26	46

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
G	476	G3-49 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	38	41	34	32	43	33	53	
H	477	H1-01 DO YOU USE OR REFER TO VARACTORS	46	44	54	50	47	40	49	
H	478	H1-02 DO YOU USE OR REFER TO TUNNEL DIODES	37	27	39	45	34	30	47	
H	479	H1-03 DO YOU USE OR REFER TO FIELD EFFECT TRANSISTORS (FET)	40	37	41	41	44	34	50	SOLID-STATE
H	480	H1-04 DO YOU USE OR REFER TO UNIJUNCTION TRANSISTORS	41	27	41	43	43	38	51	SPECIAL PURPOSE
H	481	H1-05 DO YOU USE OR REFER TO ZENER DIODES	74	80	71	72	68	76	89	DEVICES
H	482	H1-06 DO YOU USE OR REFER TO INTEGRATED CIRCUITS	57	64	59	59	50	57	71	
H	483	H2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH POWER SUPPLIES	86	94	86	78	89	82	93	
H	484	H2-02 DO YOU INSPECT POWER SUPPLIES	87	93	77	79	91	86	97	
H	485	H2-03 DO YOU CLEAN POWER SUPPLIES	80	86	68	75	87	75	87	
H	486	H2-04 DO YOU ALIGN OR ADJUST POWER SUPPLIES	76	83	73	71	78	76	81	
H	487	H2-05 DO YOU TROUBLESHOOT TO POWER SUPPLY CIRCUIT LEVEL	81	90	80	74	85	78	91	
H	488	H2-06 DO YOU TROUBLESHOOT TO POWER SUPPLY COMPONENTS	79	84	77	71	84	76	91	
H	489	H2-07 DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES	86	91	79	79	90	84	97	
H	490	H2-08 DO YOU REMOVE OR REPLACE POWER SUPPLY COMPONENTS	79	86	70	72	84	77	89	
H	491	H2-09 DO YOU WORK WITH HALF-WAVE RECTIFIERS	68	69	70	67	68	65	73	
H	492	H2-10 DO YOU WORK WITH FULL-WAVE RECTIFIERS OTHER THAN BRIDGE RECTIFIERS	69	70	70	66	70	66	77	POWER SUPPLIES
H	493	H2-11 DO YOU WORK WITH BRIDGE RECTIFIERS	72	81	73	67	75	66	81	
H	494	H2-12 DO YOU WORK WITH THREE-PHASE RECTIFIERS	63	64	63	60	63	61	76	
H	495	H2-13 DO YOU USE OR REFER TO INPUT VOLTAGE	77	81	73	73	79	73	86	
H	496	H2-14 DO YOU USE OR REFER TO INPUT FREQUENCY	54	51	57	52	54	52	63	
H	497	H2-15 DO YOU USE OR REFER TO PEAK OUTPUT VOLTAGE	58	66	59	61	58	54	57	
H	498	H2-16 DO YOU USE OR REFER TO AVERAGE OUTPUT VOLTAGE	62	66	66	62	63	56	66	
H	499	H2-17 DO YOU USE OR REFER TO RIPPLE AMPLITUDE	45	44	36	47	44	43	61	
H	500	H2-18 DO YOU USE OR REFER TO RIPPLE FREQUENCY	36	30	30	41	34	36	40	
H	501	H2-19 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE	28	23	32	31	30	24	27	
H	502	H2-20 DO YOU USE OR REFER TO SHAPE OF OUTPUT WAVEFORMS	51	51	46	55	50	50	47	
H	503	H2-21 DO YOU USE OR REFER TO EFFECTIVE OUTPUT VOLTAGE	64	66	64	63	65	60	67	
H	504	H2-22 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE FILTERS	68	70	70	62	69	68	74	
H	505	H2-23 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE FILTERS	66	64	68	61	67	68	74	
H	506	H2-24 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE INPUT L-TYPE FILTERS	57	59	63	53	59	55	70	
H	507	H2-25 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE INPUT L-TYPE FILTERS	56	57	59	53	57	54	69	
H	508	H2-26 DO YOU WORK WITH CIRCUITS WHICH EMPLOY LC PI-TYPE FILTERS	52	53	57	48	56	47	63	
H	509	H2-27 DO YOU WORK WITH CIRCUITS WHICH EMPLOY RC PI-TYPE FILTERS	51	51	55	48	54	47	61	
H	510	H2-28 DO YOU WORK WITH CIRCUITS WHICH EMPLOY DON'T REMEMBER WHICH TYPE OF FILTER	32	33	25	29	34	33	29	
H	511	H2-29 DO YOU HAVE THE OPTION OF REPLACING ONE TYPE OF FILTER WITH A DIFFERENT TYPE FILTER	7	6	4	6	6	8	13	
H	512	H3-01 DO YOU WORK WITH OSCILLATORS IN YOUR PRESENT JOB	76	80	70	68	83	72	91	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
M	513	H3-02 DO YOU INSPECT OSCILLATORS	74	80	64	64	80	73	86	
M	514	H3-03 DO YOU ALIGN OR ADJUST OSCILLATORS	72	73	63	60	81	71	84	OSCILLATORS
M	515	H3-04 DO YOU REMOVE OR REPLACE COMPLETE OSCILLATORS	71	76	57	63	81	67	81	
M	516	H3-05 DO YOU REMOVE OR REPLACE OSCILLATOR COMPONENTS	69	70	50	51	68	69	84	
M	517	H3-06 DO YOU TROUBLESHOOT TO OSCILLATOR CIRCUIT LEVEL	70	74	64	60	77	68	86	
M	518	H3-07 DO YOU TROUBLESHOOT TO OSCILLATOR COMPONENTS	63	67	59	50	67	65	81	
M	519	H3-08 DO YOU USE OR REFER TO FEEDBACK	57	57	52	53	61	53	71	
M	520	H3-09 DO YOU USE OR REFER TO FREQUENCY DETERMINING DEVICES (FDD)	56	63	50	51	60	53	67	
M	521	H3-10 DO YOU USE OR REFER TO AMPLITUDE STABILITY	45	39	48	46	48	40	60	
M	522	H3-11 DO YOU USE OR REFER TO FREQUENCY STABILITY	65	71	59	56	70	64	71	
M	523	H3-12 DO YOU USE OR REFER TO DAMPING	37	36	38	39	43	31	41	
M	524	H3-13 DO YOU USE OR REFER TO REGENERATIVE FEEDBACK	48	49	48	44	54	43	49	
M	525	H3-14 DO YOU USE OR REFER TO PIEZOELECTRIC EFFECT	20	26	20	19	20	19	29	
M	526	H3-15 DO YOU USE OR REFER TO CRITICAL DAMPING	18	20	18	18	19	19	20	
M	527	H3-16 DO YOU USE OR REFER TO UNDER DAMPING	20	21	20	22	21	19	20	
M	528	H3-17 DO YOU USE OR REFER TO OVER DAMPING	20	21	20	22	21	19	19	
M	529	H3-18 DO YOU WORK WITH OSCILLATORS WHICH USE LC TANK CIRCUITS AS FDD	49	56	52	47	48	48	64	
M	530	H3-19 DO YOU WORK WITH OSCILLATORS WHICH USE RC NETWORKS AS FDD	55	56	55	50	58	54	64	
M	531	H3-20 DO YOU WORK WITH OSCILLATORS WHICH USE CRYSTALS AS FDD	68	67	63	59	72	68	80	
M	532	H3-21 DO YOU WORK WITH OSCILLATORS WHICH USE DON'T REMEMBER WHICH TYPE OF FDD	18	17	18	16	23	15	14	
M	533	H3-22 DO YOU WORK WITH SERIES HARTLEY SINUSOIDAL OSCILLATORS	38	30	38	37	41	34	50	
M	534	H3-23 DO YOU WORK WITH SHUNT HARTLEY SINUSOIDAL OSCILLATORS	37	30	39	34	41	33	50	
M	535	H3-24 DO YOU WORK WITH COLPITTS SINUSOIDAL OSCILLATORS	40	31	41	38	43	37	51	
M	536	H3-25 DO YOU WORK WITH CLAPP SINUSOIDAL OSCILLATORS	21	16	20	23	26	19	24	
M	537	H3-26 DO YOU WORK WITH BUTLER SINUSOIDAL OSCILLATORS	26	24	27	26	27	23	33	
M	538	H3-27 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF OSCILLATORS	36	47	29	29	41	35	33	
I	539	I1-01 DO YOU WORK WITH MULTIVIBRATORS IN YOUR PRESENT JOB	42	37	38	37	45	38	53	
I	540	I1-02 DO YOU INSPECT WAVE GENERATING OR SHAPING CIRCUITS	32	26	30	24	37	30	41	
I	541	I1-03 DO YOU ALIGN OR ADJUST WAVE GENERATING OR SHAPING CIRCUITS	29	21	27	24	35	26	39	MULTIVIBRATORS
I	542	I1-04 DO YOU CALIBRATE WAVE GENERATING OR SHAPING CIRCUITS	22	14	21	18	25	21	30	
I	543	I1-05 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUITS	32	27	32	26	37	29	40	
I	544	I1-06 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUIT COMPONENTS	30	17	29	26	35	26	40	
I	545	I1-07 DO YOU REMOVE OR REPLACE COMPLETE WAVE GENERATING OR SHAPING CIRCUITS	32	30	27	29	36	28	40	
I	546	I1-08 DO YOU REMOVE OR REPLACE WAVE GENERATING OR SHAPING COMPONENTS	28	16	23	25	33	29	40	
I	547	I1-09 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK CIRCUITS	29	16	34	23	33	27	43	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
I	548	11-10 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN RC NETWORKS	30	17	34	24	37	28	41	
I	549	11-11 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN CRYSTALS	29	14	32	24	35	27	37	
I	550	11-12 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN DON'T REMEMBER WHICH TYPE OF FDD	13	16	7	13	12	12	10	
I	551	11-13 DO YOU WORK WITH ASTABLE MULTIVIBRATORS	26	21	29	22	27	24	31	
I	552	11-14 DO YOU WORK WITH MONOSTABLE MULTIVIBRATORS	26	21	34	23	31	21	30	
I	553	11-15 DO YOU WORK WITH BISTABLE MULTIVIBRATORS	28	23	32	24	32	24	33	
I	554	11-16 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE MULTIVIBRATORS	13	11	0	12	17	12	16	
I	555	12-01 DO YOU WORK WITH LIMITERS OR CLAMPERS IN YOUR PRESENT JOB	57	54	50	50	57	57	74	
I	556	12-02 DO YOU WORK WITH SERIES DIODE LIMITERS	37	23	36	35	40	35	50	
I	557	12-03 DO YOU WORK WITH SHUNT DIODE LIMITERS	32	23	32	30	35	28	43	
I	558	12-04 DO YOU WORK WITH LIMITERS WITH BIAS	28	14	34	27	33	26	33	
I	559	12-05 DO YOU WORK WITH ZENER DIODE LIMITERS	34	30	36	34	40	33	49	LIMITERS AND CLAMPERS
I	560	12-06 DO YOU WORK WITH TRANSISTOR LIMITERS	34	23	34	31	36	33	44	
I	561	12-07 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF LIMITERS	23	30	16	22	22	23	26	
I	562	12-08 DO YOU WORK WITH BASIC DIODE CLAMPING CIRCUITS	25	16	29	26	27	21	36	
I	563	12-09 DO YOU WORK WITH DIODE CLAMPING CIRCUITS WITH BIAS	22	13	25	24	25	19	27	
I	564	12-10 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF CLAMPING CIRCUIT	24	27	16	21	24	24	31	
I	565	13-01 IN YOUR PRESENT JOB, DO YOU WORK ON EQUIPMENT WHICH CONTAINS ELECTRON TUBES	83	89	79	76	87	80	96	
I	566	13-02 DO YOU CHECK ELECTRON TUBES TO SEE IF THEY ARE GOOD	78	89	75	71	82	71	87	
I	567	13-03 DO YOU USE TUBE TESTERS TO CHECK ELECTRON TUBES	71	84	77	65	78	59	74	
I	568	13-04 DO YOU USE MULTIMETERS TO CHECK ELECTRON TUBES	51	46	52	41	51	56	59	
I	569	13-05 DO YOU USE SCOPES TO CHECK ELECTRON TUBES	35	37	43	34	30	36	40	
I	570	13-06 DO YOU USE SUBSTITUTION TO CHECK ELECTRON TUBES	80	84	77	72	85	75	90	
I	571	13-07 DO YOU USE OR REFER TO CUTOFF	29	24	39	28	27	26	43	
I	572	13-08 DO YOU USE OR REFER TO PEAK INVERSE VOLTAGE RATING	14	10	20	15	12	15	10	
I	573	13-09 DO YOU USE OR REFER TO PEAK CURRENT RATING	17	13	20	18	17	17	16	
I	574	13-10 DO YOU USE OR REFER TO TRANSIT TIME	16	16	21	17	15	13	20	ELECTRON TUBES
I	575	13-11 DO YOU USE OR REFER TO PLATE DISSIPATION RATING	14	11	20	17	13	15	13	
I	576	13-12 DO YOU USE OR REFER TO SATURATION	28	30	39	28	24	25	40	
I	577	13-13 DO YOU USE OR REFER TO DC PLATE RESISTANCE	23	20	29	23	21	25	24	
I	578	13-14 DO YOU COMPUTE ACTUAL VALUES OF THE DC PLATE RESISTANCE FOR ELECTRON TUBES	7	4	9	6	6	8	6	
I	579	13-15 DO YOU USE OR REFER TO PLATE VOLTAGE	75	80	73	65	79	72	91	
I	580	13-16 DO YOU USE OR REFER TO PLATE CURRENT	57	57	64	52	64	48	70	
I	581	13-17 DO YOU USE OR REFER TO GRID VOLTAGE	74	80	73	63	78	71	91	
I	582	13-18 DO YOU USE OR REFER TO GRID CURRENT	56	57	66	51	62	48	70	
I	583	13-19 DO YOU USE OR REFER TO CATHODE VOLTAGE	72	74	71	62	75	70	90	
I	584	13-20 DO YOU USE OR REFER TO CATHODE CURRENT	53	54	66	49	58	47	69	
I	585	13-21 DO YOU USE OR REFER TO THE TRIODE AMPLIFICATION FACTOR (THE AMPLIFICATION FACTOR FOR TRIODES IS DEFINED AS	12	6	21	9	12	12	16	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
I	586	I3-22 DO YOU CALCULATE ACTUAL VALUES OF TRIODE AMPLIFICATION FACTORS	4	0	4	4	3	5	7	
I	587	I3-23 DO YOU USE OR REFER TO MULTIGRID (TETRODE, PENTODE, ETC) AMPLIFICATION FACTORS	13	11	20	11	10	14	17	
I	588	I3-24 DO YOU USE OR REFER TO ELECTRON TUBE TRANSCONDUCTANCE (G, WHICH IS MEASURED IN MHOS)	8	4	14	8	7	5	11	
I	589	I3-25 DO YOU CALCULATE ACTUAL VALUES OF ELECTRON TUBE TRANSCONDUCTANCES	4	1	5	5	3	5	6	
I	590	I3-26 DO YOU USE OR REFER TO THE ELECTRON TUBE PARAMETER CALLED AC PLATE RESISTANCE	6	1	9	6	6	6	10	
I	591	I3-27 DO YOU CALCULATE ACTUAL VALUES OF AC PLATE RESISTANCE	5	1	4	5	6	3	7	
I	592	I3-28 DO YOU USE OR REFER TO ELECTRON TUBE INTERELECTRODE CAPACITANCE	21	13	30	17	20	19	31	
I	593	I3-29 DO YOU USE OR REFER TO CHARACTERISTIC CURVES IN YOUR WORK WITH ELECTRON TUBES	7	1	13	6	8	7	9	
I	594	I3-30 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE VOLTAGE FOR A SPECIFIED BIAS	9	3	18	8	7	9	10	
I	595	I3-31 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE CURRENT FOR A SPECIFIED BIAS	8	3	18	7	7	9	9	
I	596	I3-32 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR CUTOFF	10	7	18	9	10	9	9	
I	597	I3-33 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR SATURATION	9	6	18	9	8	10	10	
I	598	I3-34 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER GAIN	44	53	48	42	45	37	54	
I	599	I3-35 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER EFFICIENCY	30	27	38	29	29	24	36	
I	600	I3-36 DO YOU USE TEST TUBE CHECKERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	52	57	61	46	56	43	57	
I	601	I3-37 DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	35	36	34	30	34	41	39	
I	602	I3-38 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	33	31	43	31	30	36	33	
I	603	I3-39 DO YOU USE CHARACTERISTIC CURVES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	6	0	13	6	7	6	10	
I	604	I3-40 DO YOU CALCULATE ANY ELECTRON TUBE CAPACITANCES SUCH AS INPUT CAPACITANCE	4	1	2	5	3	5	7	
I	605	I3-41 DO YOU USE OR REFER TO TUBE SOCKET NOTATION	67	79	64	56	71	62	81	
I	606	I3-42 DO YOU USE OR REFER TO PIN NUMBERING SYSTEMS	75	84	70	64	79	71	96	
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	6	5	6	6	6	10	
I	608	I3-44 DO YOU USE OR REFER TO TUBE SUBSTITUTION MATERIAL SUCH AS MANUALS OR CHARTS	39	53	41	33	41	34	47	
J	609	J1-01 DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS IN YOUR PRESENT JOB	72	79	68	61	77	67	91	ELECTRON TUBE AMPLIFIERS AND CIRCUITS
J	610	J1-02 DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER	19	20	27	14	22	15	20	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
J 611	J1-03 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	25	33	20	25	24	17	37	
J 612	J1-04 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	50	51	50	43	51	44	71	
J 613	J1-05 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	28	29	34	25	31	24	40	
J 614	J1-06 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	30	29	32	25	35	25	43	
J 615	J1-07 DO YOU TROUBLESHOOT OR REPAIR DON'T KNOW WHICH TYPE OF AMPLIFIER	28	29	14	24	32	28	31	
J 616	J2-01 DO YOU WORK WITH GAS TUBES (HOT CATHODE OR COLD CATHODE)	39	46	32	33	44	35	44	
J 617	J2-02 DO YOU WORK WITH CATHODE-RAY TUBES	26	39	21	27	21	28	27	
J 618	J2-03 DO YOU USE OR REFER TO THE CHARACTERISTICS OF BEAM POWER TUBES	6	6	5	4	5	6	11	
J 619	J2-04 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH BEAM POWER TUBES ARE USED	9	9	9	7	9	8	14	SPECIAL PURPOSE ELECTRON TUBES
J 620	J2-05 DO YOU USE OR REFER TO THE CHARACTERISTICS OF THYRATRONS	19	7	23	18	24	16	14	
J 621	J2-06 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH THYRATRONS ARE USED	26	24	21	23	37	20	20	
J 622	J2-07 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTRON GUNS OF CATHODE-RAY TUBES (CRT)	11	11	11	12	10	10	10	
J 623	J2-08 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROMAGNETIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES	10	13	11	11	9	10	10	
J 624	J2-09 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES	10	14	11	11	8	11	10	
J 625	J2-10 DO YOU USE OR REFER TO PHOSPHOR SCREENS	16	26	16	18	13	18	11	
J 626	J2-11 DO YOU USE OR REFER TO AQUADAG COATINGS	9	9	11	12	6	11	4	
J 627	J2-12 DO YOU USE OR REFER TO ELECTRON OPTICS	4	3	7	5	3	5	4	
J 628	J2-13 DO YOU USE OR REFER TO PERSISTENCE	9	3	13	8	8	10	7	
J 629	J2-14 DO YOU USE OR REFER TO DECAY TIMES	7	6	13	8	6	6	6	
J 630	J2-15 DO YOU USE OR REFER TO FLUORESCENCE	9	4	16	12	8	11	6	
J 631	J2-16 DO YOU USE OR REFER TO PHOSPHORESCENCE	10	6	14	12	8	12	6	
J 632	J3-01 DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	91	99	88	87	92	91	97	
J 633	J3-02 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	73	61	68	68	74	71	93	
J 634	J3-03 DO YOU PERFORM TASKS ON FREQUENCY MIXERS	81	84	75	72	83	81	94	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	66	60	63	61	70	65	80	
J 636	J3-05 DO YOU PERFORM TASKS ON REACTANCE MODULATORS	45	39	48	43	51	44	44	
J 637	J3-06 DO YOU PERFORM TASKS ON MODULATED OSCILLATORS	58	59	61	54	62	54	64	
K 638	K1-01 DO YOU WORK ON AM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	85	87	77	82	90	82	89	
K 639	K1-02 DO YOU INSPECT AM TRANSMIT OR RECEIVE SYSTEMS	85	89	73	82	90	81	91	AM SYSTEMS
K 640	K1-03 DO YOU CLEAN AM TRANSMIT OR RECEIVE SYSTEMS	81	87	68	77	87	79	89	
K 641	K1-04 DO YOU ALIGN OR ADJUST AM TRANSMIT OR RECEIVE SYSTEMS	82	87	71	77	87	80	89	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
K 642	K1-05 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE SYSTEMS	85	90	82	82	90	80	90	
K 643	K1-06 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE COMPONENTS	81	89	76	77	86	76	89	
K 644	K1-07 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE SYSTEMS	84	90	77	82	89	81	89	
K 645	K1-08 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE COMPONENTS	82	89	71	78	86	78	89	
K 646	K1-09 DO YOU PERFORM TASKS ON RF OSCILLATORS	75	86	68	69	79	71	90	
K 647	K1-10 DO YOU PERFORM TASKS ON RF AMPLIFIERS	77	87	71	70	81	72	89	
K 648	K1-11 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	77	89	73	70	81	74	89	
K 649	K1-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS	77	89	71	70	81	73	89	
K 650	K1-13 DO YOU PERFORM TASKS ON LOCAL OSCILLATORS	72	79	66	66	76	66	90	
K 651	K1-14 DO YOU PERFORM TASKS ON IF AMPLIFIERS	76	89	71	69	80	72	89	
K 652	K1-15 DO YOU PERFORM TASKS ON DETECTORS	74	84	66	68	78	67	90	
K 653	K1-16 DO YOU PERFORM TASKS ON DON'T REMEMBER WHICH AM STAGE	17	14	13	16	18	19	13	
K 654	K1-17 DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN TRANSMITTERS	48	39	46	49	49	47	64	
K 655	K1-18 DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN TRANSMITTERS	70	69	64	65	76	65	80	
K 656	K1-19 DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS	83	89	79	78	89	79	90	
K 657	K1-20 DO YOU USE OR REFER TO SELECTIVITY OF RECEIVERS	78	81	73	73	84	76	87	
K 658	K1-21 DO YOU USE OR REFER TO 2ND HARMONIC DISTORTION	42	37	48	38	47	37	53	
K 659	K1-22 DO YOU USE OR REFER TO BANDPASS DISTORTION	44	36	52	45	49	38	56	
K 660	K1-23 DO YOU USE OR REFER TO SQUARE LAW DISTORTION	16	11	16	17	15	19	14	
K 661	K1-24 DO YOU USE OR REFER TO CO-CHANNEL INTERFERENCE	32	26	38	34	32	29	47	
K 662	K1-25 DO YOU USE OR REFER TO IMAGE FREQUENCIES IN RECEIVERS	45	30	52	44	51	37	60	
K 663	K1-26 DO YOU USE OR REFER TO SIGNAL TO IMAGE RATIOS OR IMAGE REJECTION RATIOS	36	29	43	36	40	29	49	
K 664	K1-27 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM TRANSMITTER SCHEMATIC DIAGRAMS	77	84	73	71	80	73	89	
K 665	K1-28 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM RECEIVER SCHEMATIC DIAGRAMS	77	84	75	71	81	72	89	
K 666	K2-01 DO YOU WORK WITH FM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	33	26	52	26	27	43	23	
K 667	K2-02 DO YOU INSPECT FM TRANSMIT OR RECEIVE SYSTEMS	32	23	48	24	26	43	21	
K 668	K2-03 DO YOU CLEAN FM TRANSMIT OR RECEIVE SYSTEMS	30	17	41	24	25	41	20	
K 669	K2-04 DO YOU ALIGN FM TRANSMIT OR RECEIVE SYSTEMS	28	13	46	20	25	38	20	FM SYSTEMS
K 670	K2-05 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE SYSTEMS	31	20	52	25	25	42	20	
K 671	K2-06 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE COMPONENTS	29	19	45	20	25	37	20	
K 672	K2-07 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE SYSTEMS	31	23	46	25	26	40	20	
K 673	K2-08 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE COMPONENTS	29	16	41	22	25	38	19	
K 674	K2-09 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	26	10	45	18	24	35	19	
K 675	K2-10 DO YOU PERFORM TASKS ON FREQUENCY MULTIPLIERS	26	13	45	17	24	34	19	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
K 676	K2-11 DO YOU PERFORM TASKS ON DRIVERS (INTERMEDIATE AMPLIFIERS)	26	11	43	18	24	35	19	
K 677	K2-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS	26	7	45	18	24	36	19	
K 678	K2-13 DO YOU PERFORM TASKS ON RF AMPLIFIERS	27	13	45	18	23	37	19	
K 679	K2-14 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	26	10	45	18	23	34	19	
K 680	K2-15 DO YOU PERFORM TASKS ON IF AMPLIFIERS	26	13	45	18	23	37	19	
K 681	K2-16 DO YOU PERFORM TASKS ON LIMITERS	25	9	45	18	23	32	19	
K 682	K2-17 DO YOU PERFORM TASKS ON FREQUENCY DISCRIMINATORS	25	9	43	18	23	33	17	
K 683	K2-18 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSMITTERS	26	4	48	18	23	38	20	
K 684	K2-19 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM RECEIVERS	27	13	48	18	24	37	19	
K 685	K3-01 DO YOU CONVERT DECIMAL (BASE 10) NUMBERS TO OCTAL (BASE 8) NUMBERS	7	3	18	5	8	5	10	
K 686	K3-02 DO YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2) NUMBERS	21	31	25	15	13	28	39	
K 687	K3-03 DO YOU CONVERT OCTAL NUMBERS TO DECIMAL NUMBERS	5	4	20	5	6	4	6	
K 688	K3-04 DO YOU CONVERT OCTAL NUMBERS TO BINARY NUMBERS	5	3	20	4	6	4	6	NUMBERING SYSTEMS
K 689	K3-05 DO YOU CONVERT BINARY NUMBERS TO DECIMAL NUMBERS	21	33	30	15	13	26	37	
K 690	K3-06 DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS	5	3	20	5	5	4	6	
K 691	K3-07 DO YOU ADD BINARY NUMBERS TO GET A SUM	15	17	25	13	11	16	26	
K 692	K3-08 DO YOU SUBRRACT BINARY NUMBERS USING THE END-AROUND-CARRY METHOD	8	4	18	8	9	7	11	
K 693	K3-09 DO YOU SUBTRACT BINARY NUMBERS USING THE DIRECT SUBTRACTION METHOD	11	9	25	12	11	8	13	
K 694	K3-10 DO YOU ADD OCTAL NUMBERS TO GET A SUM	5	3	18	4	6	5	4	
L 695	L1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO LOGIC FUNCTIONS	18	14	23	14	20	15	26	
L 696	L1-02 DO YOU CONSTRUCT TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES	7	0	14	6	10	7	6	
L 697	L1-03 DO YOU CONSTRUCT TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES	7	0	14	6	10	7	6	
L 698	L1-04 DO YOU CONSTRUCT TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS	7	0	14	6	10	7	4	
L 699	L1-05 DO YOU CONSTRUCT TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS OR GATES	7	0	14	6	9	7	4	
L 700	L1-06 DO YOU USE OR REFER TO TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES	10	3	16	9	13	9	14	LOGIC FUNCTIONS
L 701	K1-07 DO YOU USE OR REFER TO TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES	10	1	16	9	13	9	16	
L 702	K1-08 DO YOU USE OR REFER TO TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS	10	1	14	9	12	8	16	
L 703	L1-09 DO YOU USE OR REFER TO TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS	10	3	16	8	13	9	11	
L 704	L1-10 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR AND GATES	14	10	20	12	17	10	20	
L 705	L1-11 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR OR GATES	14	10	20	12	17	10	21	
L 706	L1-12 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR NAND OR NOR GATES	14	10	20	12	17	10	20	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
L 707	L1-13 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR EXCLUSIVE OR GATES	13	9	20	12	17	10	21	
L 708	L2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO BOOLEAN EQUATIONS, LOGIC DIAGRAMS, OR LOGIC	4	7	2	2	5	1	14	
L 709	L2-02 DO YOU DRAW LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUITS	4	0	11	3	7	4	3	
L 710	L2-03 DO YOU CONSTRUCT TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS	4	0	7	3	5	3	3	
L 711	L2-04 DO YOU DRAW LOGIC DIAGRAMS FROM GIVEN BOOLEAN EQUATIONS	5	1	14	3	6	5	4	
L 712	L2-05 DO YOU MEASURE INPUTS OR OUTPUTS OF LOGIC GATES	12	9	14	11	15	9	16	
L 713	L2-06 DO YOU DEVELOP OR ANALYZE BOOLEAN EQUATIONS IN THE PROCESS OF TROUBLESHOOTING DIGITAL CIRCUITS	6	6	11	5	9	5	7	BOOLEAN EQUATIONS
L 714	L2-07 DO YOU ANALYZE LOGIC CIRCUITS BY USING BOOLEAN ALGEBRA	6	4	13	6	8	6	6	
L 715	L2-08 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUIT GATES	8	6	9	7	10	5	13	
L 716	L2-09 DO YOU USE OR REFER TO TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS	4	0	7	5	6	4	3	
L 717	L2-10 DO YOU USE OR REFER TO LOGIC DIAGRAMS CONSISTING OF MORE THAN ONE GATE	10	9	14	8	14	7	16	
L 718	L2-11 DO YOU COMPUTE SUM AND CARRY EXPRESSIONS FOR SERIAL HALF OR FULL ADDER LOGIC DIAGRAMS	5	0	7	4	7	4	6	
L 719	L2-12 DO YOU TRACE DATA FLOW THROUGH PARALLEL FULL ADDER LOGIC DIAGRAMS	7	1	11	5	10	5	10	
L 720	L2-13 DO YOU WORK WITH ASTABLE (FREE RUNNING) MULTIVIBRATORS	13	10	18	10	16	11	20	
L 721	L2-14 DO YOU WORK WITH BISTABLE (FLIP-FLOP) MULTIVIBRATORS	14	11	20	10	16	11	20	
L 722	L2-15 DO YOU WORK WITH MONOSTABLE (ONE-SHOT) MULTIVIBRATORS	13	10	18	10	16	11	16	
L 723	L2-16 DO YOU USE OR REFER TO FLIP-FLOP MULTIVIBRATOR SYMBOLS	13	11	20	11	15	10	16	
L 724	L2-17 DO YOU USE OR REFER TO SINGLE-SHOT MULTIVIBRATOR SYMBOLS	12	10	18	10	14	9	14	
L 725	L2-18 DO YOU USE OR REFER TO FLIP-FLOP CIRCUIT DIAGRAMS	12	11	18	11	15	9	17	
L 726	L2-19 DO YOU USE OR REFER TO FLIP-FLOP TRUTH TABLES	8	7	14	8	9	7	11	
L 727	L2-20 DO YOU USE OR REFER TO COMPLEMENTED FLIP-FLOP LOGIC SYMBOLS	10	9	16	9	12	6	16	
L 728	L2-21 DO YOU USE OR REFER TO COMPLEMENTING FLIP-FLOP LOGIC SYMBOLS	10	9	16	9	12	6	17	
L 729	L2-22 DO YOU MEASURE OUTPUT WAVESHAPES OF LOGIC CIRCUITS	11	3	14	9	15	8	16	
L 730	L2-23 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTED FLIP-FLOP SCHEMATIC DIAGRAMS	9	3	13	8	13	7	14	
L 731	L2-24 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTING FLIP-FLOP SCHEMATIC DIAGRAMS	9	3	13	8	12	6	16	
L 732	L2-25 DO YOU CONSTRUCT TRUTH TABLES FOR J-K FLIP-FLOP LOGIC SYMBOLS	5	1	11	5	7	3	6	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
L	733	L3-01 DO YOU WORK WITH DIGITAL COUNTERS IN YOUR PRESENT JOB	19	23	20	18	20	17	14	
L	734	L3-02 DO YOU USE OR REFER TO UP-COUNTERS	17	21	18	17	18	13	16	
L	735	L3-03 DO YOU USE OR REFER TO DOWN-COUNTERS	15	19	16	14	17	12	14	
L	736	L3-04 DO YOU USE OR REFER TO SERIAL COUNTERS	14	14	16	11	18	12	16	
L	737	L3-05 DO YOU USE OR REFER TO PARALLEL COUNTERS	11	6	14	9	14	9	13	
L	738	L3-06 DO YOU USE OR REFER TO RING COUNTERS	6	3	11	6	8	5	9	
L	739	L3-07 DO YOU USE OR REFER TO DECADE COUNTERS	9	4	13	9	10	6	10	COUNTERS
L	740	L3-08 DO YOU USE OR REFER TO COUNT DETECT CIRCUITS	9	6	14	8	13	6	10	
L	741	L3-09 DO YOU USE OR REFER TO DOWN CLOCKS	13	9	16	12	16	10	14	
L	742	L3-10 DO YOU USE OR REFER TO UP CLOCKS	13	13	16	12	16	10	14	
L	743	L3-11 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	10	9	13	9	14	7	13	
L	744	L3-12 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-	10	10	14	8	14	7	13	
L	745	L3-13 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF DECADE COUNTERS	7	4	11	6	10	5	6	
L	746	L3-14 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF RING COUNTERS	5	1	11	5	8	5	7	
L	747	L3-15 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER	9	4	16	6	15	7	11	
L	748	L3-16 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	11	10	14	7	17	8	13	
L	749	L3-17 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF COUNTERS	8	6	11	5	11	6	11	
L	750	L3-18 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	8	3	14	5	12	7	11	
L	751	L3-19 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENT-	7	4	13	4	12	5	11	
L	752	L3-20 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE	7	3	13	3	12	5	11	
L	753	L3-21 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR OTHER TYPES OF COUNTERS	6	4	13	3	9	6	9	
L	754	L3-22 DO YOU CONSTRUCT TRUTH TABLES FROM LOGIC DIAGRAMS OF DECADE COUNTERS	3	0	9	3	4	3	4	
L	755	L3-23 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP IN RING COUNTERS FOR SPECIFIC INPUT PULSES	5	1	11	5	6	5	7	
L	756	L3-24 DO YOU DETERMINE THE APPROPRIATE AND GATE NECESSARY IN COUNT DETECT CIRCUITS TO INDICATE A REQUIRED COUNT	7	1	11	4	11	6	10	
M	757	M1-01 DO YOU WORK WITH SAWTOOTH WAVE GENERATORS	25	10	30	25	29	24	27	
M	758	M1-02 DO YOU WORK WITH TRAPEZOIDAL WAVE GENERATORS	12	6	21	14	11	12	11	
M	759	M1-03 DO YOU WORK WITH PULSED OSCILLATORS WITH REGENERATIVE FEEDBACK	18	6	25	18	22	18	21	TIMING CIRCUITS
M	760	M1-04 DO YOU WORK WITH PULSED OSCILLATORS WITHOUT REGENERATIVE FEEDBACK	16	6	25	18	18	15	17	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
M 761	M1-05 DO YOU WORK WITH BLOCKING OSCILLATORS	18	9	23	19	17	19	20	
M 762	M1-06 DO YOU USE OR REFER TO RISE TIME	18	10	23	16	22	17	19	
M 763	M1-07 DO YOU USE OR REFER TO FALL OR FLYBACK TIME	16	9	25	13	21	16	13	
M 764	M1-08 DO YOU USE OR REFER TO SWEEP TIME	21	13	25	20	23	24	14	
M 765	M1-09 DO YOU USE OR REFER TO ELECTRICAL LENGTH OF SAWTOOTH WAVEFORMS	16	11	23	17	18	14	14	
M 766	M1-10 DO YOU USE OR REFER TO PHYSICAL LENGTH OF SAWTOOTH WAVEFORMS	12	9	20	12	12	12	13	
M 767	M1-11 DO YOU USE OR REFER TO LINEAR SLOPE OF SAWTOOTH WAVEFORMS	11	9	23	12	13	9	13	
M 768	M1-12 DO YOU USE OR REFER TO GATE LENGTH OF SAWTOOTH WAVEFORMS	12	9	21	12	13	12	13	
M 769	M2-01 DO YOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB	88	94	84	84	89	86	94	
M 770	M2-02 DO YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL GENERATORS	86	87	86	83	89	82	93	
M 771	M2-03 DO YOU PERFORM PERIODIC MAINTENANCE SUCH AS ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL	66	63	63	66	72	63	70	
M 772	M2-04 DO YOU TROUBLESHOOT TO AN ASSEMBLY OR SUBASSEMBLY WHILE USING SIGNAL GENERATORS	69	69	73	68	71	65	76	USE OF SIGNAL GENERATORS
M 773	M2-05 DO YOU TROUBLESHOOT TO THE SMALLEST REPLACEABLE COMPONENT WHILE USING SIGNAL GENERATORS	57	50	57	59	60	53	59	
M 774	M2-06 DO YOU USE AUDIO SINE-WAVE GENERATORS	76	84	77	69	77	77	84	
M 775	M2-07 DO YOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH AS SQUARE WAVE, TRIANGLE, PULSE, OR SPIKE	23	17	27	26	26	18	24	
M 776	M2-08 DO YOU USE RF GENERATORS LESS THAN 1,000 MH	75	81	73	76	74	72	79	
M 777	M2-09 DO YOU USE RF GENERATORS GREATER THAN 1,000 MH	36	26	39	34	39	37	40	
M 778	M2-10 DO YOU USE OTHER SPECIAL PURPOSE OR MULTI-FUNCTION GENERATORS	40	39	43	41	40	34	41	
M 779	M3-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS OR	64	61	55	56	70	58	81	
M 780	M3-02 DO YOU INSPECT MOTORS	64	63	54	55	71	59	83	
M 781	M3-03 DO YOU CLEAN OR LUBRICATE MOTORS	58	57	46	51	65	51	70	
M 782	M3-04 DO YOU OPERATE MOTORS	61	63	55	54	66	53	81	
M 783	M3-05 DO YOU REMOVE OR REPLACE COMPLETE MOTORS	64	63	52	56	70	59	81	MOTORS AND GENERATORS
M 784	M3-06 DO YOU REMOVE OR REPLACE MOTOR PARTS	33	29	29	29	43	25	33	
M 785	M3-07 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF MOTORS	60	59	52	54	64	57	79	
M 786	M3-08 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS	24	20	27	21	30	19	24	
M 787	M3-09 DO YOU PERFORM ANY TASKS ON FIELD COILS	8	3	9	9	7	9	14	
M 788	M3-10 DO YOU PERFORM ANY TASKS ON ARMATURES	15	14	14	14	14	12	16	
M 789	M3-11 DO YOU PERFORM ANY TASKS ON ROTORS	12	7	14	11	10	10	17	
M 790	M3-12 DO YOU PERFORM ANY TASKS ON BRUSHES	42	41	46	36	50	29	44	
M 791	M3-13 DO YOU PERFORM ANY TASKS ON SLIP RINGS	12	7	11	11	11	12	20	
M 792	M3-14 DO YOU PERFORM ANY TASKS ON COMMUTATORS	16	13	16	14	18	12	20	
M 793	M3-15 DO YOU PERFORM ANY TASKS ON POLE PIECES	8	6	9	9	7	10	11	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
M 794	M3-16 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OF THE FORCE OR TORQUE CREATED BY A MOTOR	8	4	5	3	4	18	10	
M 795	M3-17 DO YOU DETERMINE OR MEASURE THE DIRECTION OF THE MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR	9	7	5	6	7	17	14	
M 796	M3-18 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OR DIRECTION OF THE INDUCED VOLTAGE IN MOTORS	5	6	4	6	3	6	9	
M 797	M3-19 DO YOU WORK WITH SYNCHRONOUS MOTORS	27	21	23	24	29	29	27	
M 798	M3-20 DO YOU WORK WITH INDUCTION MOTORS	29	33	27	26	30	29	37	
M 799	M3-21 DO YOU WORK WITH SPLIT-PHASE MOTORS	19	13	27	17	19	20	23	
M 800	M3-22 DO YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS	33	36	27	29	33	31	39	
M 801	M3-23 DO YOU INSPECT GENERATORS	15	7	21	14	17	12	24	
M 802	M3-24 DO YOU CLEAN OR LUBRICATE GENERATORS	13	1	14	12	16	10	20	
M 803	M3-25 DO YOU OPERATE GENERATORS	17	14	21	14	20	13	26	
M 804	M3-26 DO YOU REMOVE OR REPLACE COMPLETE GENERATORS	12	3	11	11	14	10	20	
M 805	M3-27 DO YOU REMOVE OR REPLACE GENERATOR PARTS	7	0	11	7	8	6	7	
M 806	M3-28 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF GENERATORS	12	3	14	10	14	10	20	
M 807	M3-29 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF GENERATORS	6	0	11	6	7	5	4	
N 808	N1-01 DO YOU WORK WITH METERS IN YOUR PRESENT JOB	83	90	80	81	85	82	87	
N 809	N1-02 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF PERMANENT MAGNETS	21	13	30	21	22	20	19	
N 810	N1-03 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF MOVING COILS	23	19	36	23	25	23	20	
N 811	N1-04 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF SPIRAL SPRINGS	21	17	32	21	22	20	17	METER MOVEMENTS
N 812	N1-05 DO YOU READ METER SCALES	84	90	82	82	86	83	87	
N 813	N1-06 DO YOU EXTEND THE RANGE OF AMMETERS	32	29	30	40	31	31	30	
N 814	N1-07 DO YOU ZERO OHMMETERS	83	86	82	80	86	83	87	
N 815	N1-08 DO YOU ZERO AMMETERS	48	47	41	53	44	50	53	
N 816	N1-09 DO YOU EXTEND THE RANGE OF VOLTMETERS	46	33	43	51	48	44	53	
N 817	N1-10 DO YOU USE OR REFER TO VOLTMETER SENSITIVITY (EXPRESSED IN UNITS OF OHMS PER VOLT)	54	53	50	53	59	52	59	
N 818	N2-01 DO YOU WORK WITH SATURABLE REACTORS OR MAGNETIC AMPLIFIERS IN YOUR PRESENT JOB	14	3	9	14	21	12	20	
N 819	N2-02 DO YOU INSPECT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	13	1	5	12	21	10	19	
N 820	N2-03 DO YOU CLEAN MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	10	0	2	12	16	8	17	
N 821	N2-04 DO YOU ADJUST MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	7	0	0	8	11	6	10	SATURABLE REACTORS AND MAGNETIC AMPLIFIERS
N 822	N2-05 DO YOU TROUBLESHOOT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	11	1	5	12	19	8	11	
N 823	N2-06 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	13	1	4	13	21	10	19	
N 824	N2-07 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIER OR SATURABLE REACTOR COMPONENTS	7	0	2	8	10	4	10	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
N 825	N2-08 DO YOU USE OR REFER TO HYSTERESIS CURVES OR LOOPS	4	0	5	4	6	3	7	
N 826	N2-09 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF	5	0	4	5	9	4	6	
N 827	N2-10 DO YOU MEASURE OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE	6	0	4	6	10	5	11	
N 828	N2-11 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS FOR MAGNETIC AMPLIFIERS	4	0	2	5	7	3	6	
N 829	N2-12 DO YOU USE OR REFER TO COERCIVE FORCE IN SATURABLE REACTORS	2	0	2	2	2	1	3	
N 830	N2-13 DO YOU USE OR REFER TO RESIDUAL MAGNETISM IN SATURABLE REACTORS	3	0	2	4	4	2	4	
N 831	N2-14 DO YOU USE OR REFER TO FLUX DENSITY IN SATURABLE REACTORS	2	0	2	3	3	2	4	
N 832	N2-15 DO YOU USE OR REFER TO POINT OF SATURATION IN SATURABLE REACTORS	4	0	2	4	6	4	4	
N 833	N2-16 DO YOU USE OR REFER TO SATURABLE REACTOR SCHEMATIC SYMBOLS	9	1	7	10	14	7	11	
N 834	N3-01 DO YOU WORK WITH WAVESHAPING CIRCUITS IN YOUR PRESENT JOB	20	7	20	19	22	21	23	
N 835	N3-02 DO YOU USE OR REFER TO TRANSIENT INTERVALS	11	3	13	10	15	11	13	
N 836	N3-03 DO YOU USE OR REFER TO PULSE WIDTH (PW)	15	4	14	14	17	16	17	
N 837	N3-04 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)	12	3	14	12	16	13	14	
N 838	N3-05 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)	13	3	14	12	15	14	16	WAVESHAPING CIRCUITS
N 839	N3-06 DO YOU USE OR REFER TO DIFFERENTIATING CIRCUITS	13	3	18	12	18	12	16	
N 840	N3-07 DO YOU USE OR REFER TO INTEGRATING CIRCUITS	14	4	18	12	17	13	17	
N 841	N3-08 DO YOU USE OR REFER TO THE CLASSIFICATION OF TIME CONSTANTS (TC) AS LONG, MEDIUM, OR SHORT	10	4	16	12	11	9	10	
N 842	N3-09 DO YOU DETERMINE WHETHER AN LR OR RC CIRCUIT IS DIFFERENTIATING OR INTEGRATING BASED ON THE TIME CONSTANT	6	1	7	6	10	5	6	
N 843	N3-10 DO YOU WORK WITH SQUARE WAVE GENERATORS	16	4	18	16	18	14	20	
N 844	N3-11 DO YOU WORK WITH RECTANGULAR WAVE GENERATORS	10	4	14	10	11	7	9	
O 845	O1-01 DO YOU WORK ON SINGLE SIDEBAND SYSTEMS IN YOUR PRESENT JOB	54	16	45	84	72	31	34	
O 846	O1-02 DO YOU INSPECT SSB TRANSMIT OR RECEIVE SYSTEMS	53	14	43	82	70	29	36	
O 847	O1-03 DO YOU CLEAN SSB TRANSMIT OR RECEIVE SYSTEMS	49	14	32	76	65	26	34	
O 848	O1-04 DO YOU ALIGN SSB TRANSMIT OR RECEIVE SYSTEMS	47	14	41	71	61	27	29	
O 849	O1-05 DO YOU TROUBLESHOOT TO SS_B TRANSMIT OR RECEIVE SYSTEMS	54	16	46	83	71	30	36	SINGLE SIDEBAND SYSTEMS
O 850	O1-06 DO YOU TROUBLESHOOT TO SS_B TRANSMIT OR RECEIVE COMPONENTS	48	14	43	75	62	25	33	
O 851	O1-07 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE SYSTEMS	52	16	41	83	70	28	31	
O 852	O1-08 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE COMPONENTS	48	16	38	75	63	26	33	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007
0	853	01-09 DO YOU PERFORM TASKS ON SSB AUDIO AMPLIFIERS	43	14	39	65	55	25	30
0	854	01-10 DO YOU PERFORM TASKS ON SSB BALANCED MODULATORS	41	14	39	64	53	24	29
0	855	01-11 DO YOU PERFORM TASKS ON SSB CARRIER OSCILLATORS	37	13	36	56	48	22	29
0	856	01-12 DO YOU PERFORM TASKS ON SSB LC FILTERS	36	13	38	55	47	20	27
0	857	01-13 DO YOU PERFORM TASKS ON SSB CRYSTAL FILTERS	32	9	32	50	40	19	23
0	858	01-14 DO YOU PERFORM TASKS ON SSB MECHANICAL FILTERS	37	10	34	57	47	22	30
0	859	01-15 DO YOU PERFORM TASKS ON SSB OSCILLATORS	42	14	41	65	53	24	31
0	860	01-16 DO YOU PERFORM TASKS ON SSB MIXERS	42	14	39	65	52	24	30
0	861	01-17 DO YOU PERFORM TASKS ON SSB DRIVERS	42	14	39	65	52	24	30
0	862	01-18 DO YOU PERFORM TASKS ON SSB POWER AMPLIFIERS	43	13	41	68	53	24	29
0	863	01-19 DO YOU PERFORM TASKS ON SSB RF AMPLIFIERS	43	14	41	68	52	24	30
0	864	01-20 DO YOU PERFORM TASKS ON SSB FREQUENCY CONVERTERS	39	10	41	62	47	22	27
0	865	01-21 DO YOU PERFORM TASKS ON SSB IF AMPLIFIERS	42	14	39	66	52	24	30
0	866	01-22 DO YOU PERFORM TASKS ON SSB DEMODULATORS	38	13	38	58	49	21	27
0	867	01-23 DO YOU PERFORM TASKS ON SSB DON'T REMEMBER WHICH SSB SYSTEM STAGES	11	1	7	18	14	6	10
0	868	01-24 DO YOU USE OR REFER TO SELECTIVE FADING	21	7	23	30	25	15	20
0	869	01-25 DO YOU USE OR REFER TO PEAK POWER	37	13	41	56	43	24	26
0	870	01-26 DO YOU USE OR REFER TO FREQUENCY STABILITY	45	14	46	67	59	24	30
0	871	01-27 DO YOU USE OR REFER TO RESPONSE CURVES FOR BANDWIDTH FILTERS	16	1	20	25	19	12	11
0	872	01-28 DO YOU CALCULATE PEAK POWER OR EFFECTIVE POWER OF SSB TRANSMITTERS	22	7	27	39	24	15	10
0	873	01-29 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB TRANSMITTER SCHEMATIC DIAGRAMS	43	14	45	65	56	23	27
0	874	01-30 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB RECEIVER SCHEMATIC DIAGRAMS	43	14	45	66	55	22	29
0	875	02-01 DO YOU WORK ON PULSE MODULATION SYSTEMS IN YOUR PRESENT JOB	4	7	0	3	3	4	7
0	876	02-02 DO YOU INSPECT PULSE MODULATION SYSTEMS	4	6	0	3	3	4	7
0	877	02-03 DO YOU CLEAN PULSE MODULATION SYSTEMS	3	4	0	3	3	4	4
0	878	02-04 DO YOU ALIGN PULSE MODULATION SYSTEMS	3	4	0	3	3	4	6
0	879	02-05 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS	4	4	0	4	3	4	7
0	880	02-06 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEM COMPONENTS	3	4	0	3	3	4	3
0	881	02-07 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS	3	6	0	3	3	4	4
0	882	02-08 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEM COMPONENTS	3	4	0	3	3	4	3
0	883	02-09 DO YOU WORK ON PULSE-AMPLITUDE MODULATION (PAM) SYSTEMS	2	4	0	2	3	2	1
0	884	02-10 DO YOU WORK ON PULSE-DURATION MODULATION (PDM) SYSTEMS	2	0	0	2	3	1	1
0	885	02-11 DO YOU WORK ON PULSE-POSITION MODULATION (PPM) SYSTEMS	2	4	0	2	3	1	3
0	886	02-12 DO YOU WORK ON PULSE-CODE MODULATION (PCM) SYSTEMS	2	4	0	2	2	2	1
0	887	02-13 DO YOU WORK ON LINE PULSING MODULATION SYSTEMS	1	1	0	2	2	1	1
0	888	02-14 DO YOU WORK ON DON'T REMEMBER WHICH TYPE OF MODULATION SYSTEM	2	3	0	1	0	3	3

PULSE MODULATION SYSTEMS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
0 889	02-15 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER SUPPLIES	3	6	2	2	3	3	4	
0 890	02-16 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM CHARGING CHOKES AND CHARGING DIODES	2	3	2	1	2	2	3	
0 891	02-17 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE FORMING NETWORKS	2	4	2	2	3	2	4	
0 892	02-18 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TIMERS	2	3	0	1	3	2	4	
0 893	02-19 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM SWITCHES SUCH AS GAS THYRATRONS	1	0	0	1	2	1	0	
0 894	02-20 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE TRANSFORMERS	2	0	0	2	2	2	1	
0 895	02-21 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TRANSMITTER TUBES	2	6	2	2	2	2	3	
0 896	02-22 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM RF AMPLIFIERS	3	6	2	3	2	3	3	
0 897	02-23 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM FREQUENCY CONVERTERS	3	4	2	3	3	3	3	
0 898	02-24 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM IF AMPLIFIERS	3	6	2	3	3	3	3	
0 899	02-25 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DETECTORS	3	6	2	2	3	2	3	
0 900	02-26 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM VIDEO AMPLIFIERS	1	1	0	2	2	2	1	
0 901	02-27 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER VIDEO AMPLIFIERS	1	0	0	2	2	1	0	
0 902	02-28 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DON'T REMEMBER WHICH PULSE MODULATION SYSTEM STAGES	1	3	0	0	0	2	1	
0 903	02-29 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)	2	1	0	1	3	2	1	
0 904	02-30 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)	2	1	0	1	3	2	1	
0 905	02-31 DO YOU USE OR REFER TO PULSE WIDTH (PW)	2	1	2	2	3	3	3	
0 906	02-32 DO YOU USE OR REFER TO PULSE SHAPE	2	1	2	1	3	2	1	
0 907	02-33 DO YOU USE OR REFER TO PEAK POWER	2	7	2	2	2	2	1	
0 908	02-34 DO YOU USE OR REFER TO AVERAGE POWER	2	3	2	2	2	2	0	
0 909	02-35 DO YOU CALCULATE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)	1	0	0	1	2	1	0	
0 910	02-36 DO YOU MEASURE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)	2	1	0	1	3	2	3	
0 911	02-37 DO YOU USE FORMULAS TO CALCULATE AVERAGE POWER OR PEAK POWER OF PULSE MODULATION TRANSMIT SYSTEMS	1	0	0	1	2	1	0	
0 912	02-38 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION TRANSMITTER SCHEMATIC DIAGRAMS	2	4	0	3	3	1	3	
0 913	02-39 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION RECEIVER SCHEMATIC DIAGRAMS	3	4	2	3	3	3	4	
0 914	03-01 DO YOU WORK WITH ANTENNAS IN YOUR PRESENT JOB	88	89	68	90	92	90	93	
0 915	03-02 DO YOU INSPECT ANTENNAS	88	90	63	89	92	89	94	ANTENNAS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007
0 916	03-03 DO YOU CLEAN ANTENNAS	81	80	61	84	85	79	87
0 917	03-04 DO YOU PHYSICALLY ALIGN ANTENNAS	33	30	23	34	32	35	41
0 918	03-05 DO YOU ELECTRICALLY ALIGN ANTENNAS	32	23	21	32	35	33	34
0 919	03-06 DO YOU TROUBLESHOOT TO ANTENNAS	87	87	70	89	91	86	93
0 920	03-07 DO YOU TROUBLESHOOT TO ANTENNA COMPONENTS	41	30	34	42	41	47	41
0 921	03-08 DO YOU REMOVE OR INSTALL ANTENNAS	89	90	64	91	92	90	96
0 922	03-09 DO YOU REMOVE OR REPLACE COMPONENTS OF ANTENNAS	38	29	27	39	37	44	40
0 923	03-10 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF E OR ELECTRIC FIELD LINES	8	1	9	11	6	8	13
0 924	03-11 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF H OR MAGNETIC FIELD LINES	7	1	7	11	5	7	14
0 925	03-12 DO YOU DETERMINE THE DIRECTION OF THE MAGNETIC LINES IN RELATION TO THE ELECTRIC LINES OF FORCE FOR ANTENNAS	7	1	7	10	5	8	14
0 926	03-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE OF CORRECT LENGTH (HALF-WAVE) ACT AS	12	7	11	14	15	11	11
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	12	4	11	15	15	11	13
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	14	6	9	17	18	13	14
0 929	03-16 DO YOU WORK WITH HERTZ ANTENNAS	22	19	21	22	24	19	37
0 930	03-17 DO YOU WORK WITH MARCONI ANTENNAS	16	19	14	18	19	11	21
0 931	03-18 DO YOU WORK WITH BROADSIDE ARRAYS	9	13	5	12	9	8	10
0 932	03-19 DO YOU WORK WITH END-FIRE ARRAYS	6	7	5	8	6	3	6
0 933	03-20 DO YOU WORK WITH CARDIOID ARRAYS	18	30	7	14	14	23	29
0 934	03-21 DO YOU WORK WITH COLLINEAR ARRAYS	7	6	7	11	6	8	6
0 935	03-22 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC INDUCTION FIELDS WHEN WORKING WITH ANTENNAS	7	1	9	7	6	9	11
0 936	03-23 DO YOU MEASURE ELECTROMAGNETIC INDUCTION FIELDS OF ANTENNAS	4	1	5	4	3	5	9
0 937	03-24 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC RADIATION FIELDS WHEN WORKING WITH ANTENNAS	7	1	9	8	6	9	10
0 938	03-25 DO YOU MEASURE ELECTROMAGNETIC RADIATION FIELDS OF ANTENNAS	4	1	5	6	4	5	4
0 939	03-26 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA RADIATION	3	1	4	4	2	3	4
0 940	03-27 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA INDUCTION FIELD	3	1	4	4	2	3	6
0 941	03-28 ARE ANY OF THE ANTENNAS YOU WORK ON LINEARLY POLARIZED	13	16	13	18	12	11	13
0 942	03-29 ARE ANY OF THE ANTENNAS YOU WORK ON CIRCULARLY POLARIZED	10	10	9	12	11	10	20
0 943	03-30 DO YOU MEASURE OR DETERMINE THE POLARITY OF ANTENNAS YOU WORK ON	4	4	7	7	4	3	7
0 944	03-31 DO YOU CONSTRUCT, OR MAKE THE CALCULATIONS NECESSARY TO CONSTRUCT, ANTENNAS OF CORRECT LENGTH FOR	7	4	7	12	5	7	4

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
O 945	03-32 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS	7	6	9	9	7	6	1	
O 946	03-33 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS DIRECTORS	5	4	7	7	6	5	1	
O 947	03-34 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS REFLECTORS	5	6	9	8	4	3	4	
O 948	03-35 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN DON'T REMEMBER WHAT KIND OF ELEMENTS	35	39	21	28	37	38	50	
O 949	03-36 DO YOU WORK ON UNIDIRECTIONAL ANTENNAS	37	40	38	37	39	36	33	
O 850	03-37 DO YOU WORK ON BIDIRECTIONAL ANTENNAS	33	31	23	33	38	30	34	
O 851	03-38 DO YOU WORK ON DON'T REMEMBER THE DIRECTIONALITY	27	27	14	25	29	26	31	
O 852	03-39 DO YOU WORK WITH ROTAR ANTENNA ARRAYS	19	14	11	12	18	21	29	
P 953	P1-01 IN YOUR PRESENT JOB DO YOU WORK WITH TRANSMISSION LINES (TRANSMISSION LINES ARE DEFINED TO INCLUDE LEADS	73	81	59	71	74	70	77	
P 954	P1-02 DO YOU REFER TO OR USE COPPER LOSS OR I2R LOSS IN TRANSMISSION LINES	6	3	5	6	6	7	11	
P 955	P1-03 DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY CURRENTS IN TRANSMISSION LINES	12	9	16	11	14	10	17	
P 956	P1-04 DO YOU REFER TO OR USE RADIATION LOSS IN TRANSMISSION LINES	25	33	27	18	24	28	36	TRANSMISSION LINES
P 957	P1-05 DO YOU USE OR REFER TO DIELECTRIC LOSS IN TRANSMISSION LINES	12	11	16	13	9	10	19	
P 958	P1-06 DO YOU USE OR REFER TO LEAKAGE LOSSES IN TRANSMISSION LINES	18	21	18	17	14	19	20	
P 959	P1-07 DO YOU WORK WITH TWISTED PAIR TRANSMISSION LINES	10	9	9	9	13	10	11	
P 960	P1-08 DO YOU WORK WITH TWIN LEAD TRANSMISSION LINES	8	6	7	8	9	9	10	
P 961	P1-09 DO YOU WORK WITH OPEN TWO-WIRE TRANSMISSION LINES	5	1	5	6	5	5	7	
P 962	P1-10 DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION LINES	73	79	59	71	75	71	76	
P 963	P1-11 DO YOU WORK WITH RIGID COAXIAL CABLE TRANSMISSION LINES	29	19	32	49	25	25	19	
P 964	P1-12 DO YOU TROUBLESHOOT TRANSMISSION LINES	70	80	57	68	70	68	76	
P 965	P1-13 DO YOU ANALYZE VOLTAGE OR CURRENT WAVEFORMS IN TRANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION	8	11	9	13	6	7	9	
P 966	P1-14 DO YOU SELECT APPROPRIATE TRANSMISSION LINES TERMINATIONS TO ACHIEVE DESIRED WAVEFORMS	6	6	5	7	7	5	6	
P 967	P1-15 DO YOU USE OR REFER TO SCHEMATIC SYMBOLS FOR LINE TERMINATIONS IN TERMS OF CIRCUIT TERMINATIONS	20	20	20	24	18	19	19	
P 968	P1-16 DO YOU MEASURE STANDING WAVE RATIOS (SR) OF TRANSMISSION LINES	58	69	52	56	65	53	54	
P 969	P1-17 DO YOU CALCULATE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES	26	34	25	30	26	22	19	
P 970	P1-18 DO YOU PERFORM THE CALCULATIONS NECESSARY TO DETERMINE THE IMPEDANCE AND LENGTH OF QUARTER - WAVELENGTH	6	4	13	5	7	5	4	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
P 971	P1-19 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING MATCHING TRANSFORMERS	21	19	20	23	26	19	21	
P 972	P1-20 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING DELTA MATCHING	7	4	13	8	10	6	6	
P 973	P1-21 DO YOU SELECT THE TYPE OF TRANSMISSION LINE NEEDED FOR PARTICULAR JOBS WITHOUT REFERRING TO TECHNICAL DATA	7	10	5	7	7	5	7	
P 974	P1-22 DO YOU USE OR REFER TO THE TERM CHARACTERISTIC IMPEDANCE (ZO) OF TRANSMISSION LINES	16	16	20	17	19	10	20	
P 975	P1-23 DO YOU CALCULATE THE CHARACTERISTIC IMPEDANCE (ZO) OF TRANSMISSION LINES	4	4	4	5	4	5	7	
P 976	P1-24 DO YOU USE OR REFER TO THE TERM CUTOFF FREQUENCY OF TRANSMISSION LINES	6	4	5	5	6	6	9	
P 977	P1-25 DO YOU USE OR REFER TO THE TERM VELOCITY FACTOR (K) OF TRANSMISSION LINES	3	1	2	4	3	2	4	
P 978	P1-26 DO YOU COMPUTE THE ELECTRICAL LENGTH OF TRANSMISSION LINES FOR PARTICULAR FREQUENCIES	8	1	9	9	10	9	6	
P 979	P1-27 DO YOU CONSTRUCT TRANSMISSION LINES OF PARTICULAR ELECTRICAL LENGTH FOR GIVEN FREQUENCIES	6	3	5	7	8	5	9	
P 980	P1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT AS THE FREQUENCY INCREASES AND THE PHYSICAL LENGTH OF	11	10	13	12	13	10	14	
P 981	P1-29 DO YOU WORK WITH NONRESONANT (FLAT) TRANSMISSION LINES	11	14	9	14	9	9	13	
P 982	P1-30 DO YOU WORK WITH RESONANT TRANSMISSION LINES	20	20	20	19	23	19	21	
P 983	P1-31 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING STUB MATCHING	14	9	13	12	17	15	14	
P 984	P2-01 DO YOU WORK WITH WAVEGUIDES OR CAVITY RESONATORS IN YOUR PRESENT JOB	8	7	7	6	9	7	13	
P 985	P2-02 DO YOU INSPECT WAVEGUIDES OR CAVITY RESONATORS	7	4	5	5	8	6	11	
P 986	P2-03 DO YOU CLEAN WAVEGUIDES OR CAVITY RESONATORS	6	4	4	5	7	6	9	
P 987	P2-04 DO YOU BEND WAVEGUIDES OR CAVITY RESONATORS	4	4	2	4	5	3	7	
P 988	P2-05 DO YOU TWIST WAVEGUIDES OR CAVITY RESONATORS	3	1	2	4	5	2	3	
P 989	P2-06 DO YOU PRESSURIZE WAVEGUIDES OR CAVITY RESONATORS	2	0	2	3	2	3	3	WAVEGUIDES AND CAVITY RESONATORS
P 990	P2-07 DO YOU PURGE WAVEGUIDES OR CAVITY RESONATORS	2	0	2	2	2	1	1	
P 991	P2-08 DO YOU TROUBLESHOOT WAVEGUIDES OR CAVITY RESONATORS	6	6	4	3	8	6	10	
P 992	P2-09 DO YOU REMOVE OR INSTALL COMPLETE WAVEGUIDES	2	0	0	2	1	3	1	
P 993	P2-10 DO YOU REMOVE OR INSTALL WAVEGUIDE SECTIONS	1	0	0	1	1	2	1	
P 994	P2-11 DO YOU REMOVE OR INSTALL DUMMY LOADS	4	0	0	4	6	4	7	
P 995	P2-12 DO YOU REMOVE OR INSTALL E BENDS	1	0	0	1	2	0	3	
P 996	P2-13 DO YOU REMOVE OR INSTALL H BENDS	1	0	0	1	1	0	3	
P 997	P2-14 DO YOU REMOVE OR INSTALL OTHER BENDS	1	0	0	1	2	1	3	
P 998	P2-15 DO YOU REMOVE OR INSTALL CHOKE JOINTS	1	0	0	1	2	0	3	
P 999	P2-16 DO YOU REMOVE OR INSTALL ROTATING JOINTS	1	0	0	1	2	1	4	
P1000	P2-17 DO YOU REMOVE OR INSTALL DIRECTIONAL COUPLERS	3	0	0	2	4	3	6	
P1001	P2-18 DO YOU REMOVE OR INSTALL BIDIRECTIONAL COUPLERS	2	0	0	3	3	2	4	
P1002	P2-19 DO YOU USE OR REFER TO "A" WALL OF WAVEGUIDES	1	0	0	2	1	0	1	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007
P1003	P2-20 DO YOU USE OR REFER TO "B" WALL OF WAVEGUIDES	1	0	0	2	1	0	1
P1004	P2-21 DO YOU USE OR REFER TO CUTOFF FREQUENCY OF WAVEGUIDES	1	0	0	3	1	1	1
P1005	P2-22 DO YOU USE OR REFER TO FREQUENCY-DETERMINING WALL OF WAVEGUIDES	1	0	0	3	1	0	1
P1006	P2-23 DO YOU USE OR REFER TO POWER-DETERMINING WALL OF WAVEGUIDES	1	0	0	2	2	0	1
P1007	P2-24 DO YOU USE OR REFER TO ELECTRIC FIELD BOUNDARY CONDITIONS	1	0	0	3	1	0	1
P1008	P2-25 DO YOU USE OR REFER TO MAGNETIC FIELD BOUNDARY CONDITIONS	1	0	0	2	1	0	1
P1009	P2-26 DO YOU USE OR REFER TO DUPLEXER FIELD BOUNDARY CONDITIONS	1	0	0	2	1	0	1
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	1	0	0	2	1	0	1
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	1	0	0	2	0	0	0
P1012	P2-29 ARE YOU CONCERNED WITH THE MATERIAL (SUCH AS BRASS) WHICH WAVEGUIDES ARE MADE OF	1	0	0	2	1	0	1
P1013	P2-30 DO YOU COMPUTE THE LENGTH OF A WAVEGUIDE FOR SPECIFIC INSTALLATION	1	0	0	2	1	0	1
P1014	P2-31 DO YOU USE THE RIGHT HAND RULE TO DETERMINE THE DIRECTION OF PROPAGATION, DIRECTION OF "E" FIELD, OR	1	0	0	2	1	1	1
P1015	P2-32 DO YOU USE OR REFER TO THE TIME PHASE OF PEAK "E" OR "H" LINES IN WAVEGUIDES	1	0	0	2	1	1	1
P1016	P2-33 DO YOU MEASURE THE TIME PHASE OF "E" OR "H" LINES IN WAVEGUIDES	1	0	0	1	1	0	0
P1017	P2-34 DO YOU USE OR REFER TO THE SPACE QUADRATURE OF "E" OR "H" LINES IN WAVEGUIDES	1	0	0	1	1	0	1
P1018	P2-35 ARE HIGH POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	1	0	0	2	2	0	3
P1019	P2-36 ARE LOW POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	1	0	0	2	1	0	4
P1020	P2-37 ARE LOOPS USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	4	1	5	4	6	1	9
P1021	P2-38 ARE APERTURES (WINDOWS OR IRISES) USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	1	0	2	2	1	0	1
P1022	P2-39 ARE DON'T REMEMBER THE KIND OF ENERGY COUPLING USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	2	3	2	0	2	4	3
P1023	P2-40 DO YOU DETERMINE WHERE PROBES SHOULD BE MOUNTED IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO	1	0	0	1	1	0	1
P1024	P2-41 DO YOU DETERMINE THE POSITIONING OF LOOPS IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO	1	0	0	2	1	0	1

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
P1025	P2-42 DO YOU DETERMINE THE POSITIONING OR SIZE OF APERTURES IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO	1	0	0	2	1	0	0	
P1026	P2-43 ARE CHOKE JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	1	0	0	2	1	0	0	
P1027	P2-44 ARE ROTATING JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	1	0	0	2	2	1	1	
P1028	P2-45 ARE DON'T REMEMBER THE KIND OF JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	2	4	0	0	4	3	3	
P1029	P2-46 DO YOU TUNE CAVITY RESONATORS USING CAPACITIVE TUNING	4	6	4	3	4	5	10	
P1030	P2-47 DO YOU TUNE CAVITY RESONATORS USING INDUCTIVE TUNING	4	4	4	3	4	4	10	
P1031	P2-48 DO YOU TUNE CAVITY RESONATORS USING VOLUME TUNING	2	1	4	1	2	1	3	
P1032	P2-49 DO YOU TUNE CAVITY RESONATORS USING DON'T REMEMBER THE METHOD OF TUNING	1	0	2	1	2	3	1	
P1033	P2-50 DO YOU MEASURE THE FREQUENCY OF SIGNALS IN CAVITY RESONATORS	4	3	5	2	5	5	7	
P1034	P3-01 IN YOUR PRESENT JOB DO YOU WORK WITH KLYSTRONS, TRAVELING WAVE TUBES (TWT), PARAMETRIC AMPLIFIERS, OR	2	0	2	2	2	3	1	
P1035	P3-02 DO YOU USE OR REFER TO INTERELECTRODE CAPACITANCE	1	0	0	1	1	3	1	
P1036	P3-03 DO YOU USE OR REFER TO ELECTRON TRANSIT TIME	1	0	0	1	1	1	1	
P1037	P3-04 DO YOU USE OR REFER TO LEAD INDUCTANCE	1	0	0	1	1	1	1	
P1038	P3-05 DO YOU USE OR REFER TO RF LOSSES IN EXTERNAL CIRCUITRY	1	0	0	1	1	2	1	
P1039	P3-06 DO YOU USE OR REFER TO PRINCIPLE OF ELECTRON VELOCITY MODULATION	1	0	0	0	1	0	0	MICROWAVE AMPLIFIERS AND OSCILLATORS
P1040	P3-07 DO YOU USE OR REFER TO ELECTRON BUNCHING	1	0	0	0	1	0	0	
P1041	P3-08 DO YOU WORK WITH TWO-CAVITY KLYSTRONS	1	0	0	0	1	1	0	
P1042	P3-09 DO YOU WORK WITH THREE-CAVITY KLYSTRONS	1	0	0	0	1	1	0	
P1043	P3-10 DO YOU WORK WITH REFLEX KLYSTRONS	0	0	0	0	1	1	0	
P1044	P3-11 DO YOU WORK WITH TRAVELING-WAVE TUBES (TWT)	1	0	0	1	1	2	0	
P1045	P3-12 DO YOU WORK WITH NONDEGENERATIVE PARAMETRIC AMPLIFIERS	1	0	0	1	1	0	0	
P1046	P3-13 DO YOU WORK WITH UP-CONVERTER PARAMETRIC AMPLIFIERS	0	0	0	0	1	0	0	
P1047	P3-14 DO YOU WORK WITH MAGNETRONS	1	0	0	0	1	0	0	
P1048	P3-15 DO YOU INSPECT KLYSTRONS OR TWT	1	0	0	1	1	2	0	
P1049	P3-16 DO YOU CLEAN KLYSTRONS OR TWT	1	0	0	1	1	0	0	
P1050	P3-17 DO YOU TUNE KLYSTRONS OR TWT ELECTRICALLY	0	0	0	0	1	1	0	
P1051	P3-18 DO YOU TUNE KLYSTRONS OR TWT MECHANICALLY	0	0	0	0	1	0	0	
P1052	P3-19 DO YOU PERFORM OPERATIONAL CHECKS OF KLYSTRONS OR TWT	1	0	0	1	1	2	0	
P1053	P3-20 DO YOU TROUBLESHOOT KLYSTRONS OR TWT	1	0	0	1	1	2	0	
P1054	P3-21 DO YOU REMOVE OR REPLACE COMPLETE KLYSTRON OR TWT	1	0	0	1	1	2	0	
P1055	P3-22 DO YOU REMOVE OR REPLACE KLYSTRON OR TWT COMPONENTS	0	0	0	0	1	0	0	
P1056	P3-23 DO YOU INSPECT PARAMETRIC AMPLIFIERS	1	0	0	2	1	1	1	
P1057	P3-24 DO YOU CLEAN PARAMETRIC AMPLIFIERS	1	0	0	2	1	1	1	
P1058	P3-25 DO YOU ADJUST PARAMETRIC AMPLIFIERS	1	0	0	2	1	1	1	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007
P1059 P3-26 DO YOU TUNE PARAMETRIC AMPLIFIERS	1	0	0	1	1	1	1
P1060 P3-27 DO YOU PERFORM OPERATIONAL CHECKS OF PARAMETRIC AMPLIFIERS	1	0	0	1	1	1	1
P1061 P3-28 DO YOU TROUBLESHOOT PARAMETRIC AMPLIFIERS	1	0	0	1	1	1	1
P1062 P3-29 DO YOU REMOVE OR REPLACE COMPLETE PARAMETRIC AMPLIFIER	1	0	0	2	1	1	1
P1063 P3-30 DO YOU REMOVE OR REPLACE PARAMETRIC AMPLIFIER COMPONENTS	1	0	0	1	1	0	1
P1064 P3-31 DO YOU INSPECT MAGNETRONS	1	0	0	1	1	0	0
P1065 P3-32 DO YOU CLEAN MAGNETRONS	1	0	0	1	1	0	0
P1066 P3-33 DO YOU ADJUST MAGNETRONS	1	0	0	1	1	0	0
P1067 P3-34 DO YOU TUNE MAGNETRONS	0	0	0	0	1	0	0
P1068 P3-35 DO YOU PERFORM OPERATIONAL CHECKS OF MAGNETRONS	1	0	0	1	1	0	0
P1069 P3-36 DO YOU TROUBLESHOOT MAGNETRONS	1	0	0	1	1	0	0
P1070 P3-37 DO YOU REMOVE OR REPLACE COMPLETE MAGNETRON	1	0	0	0	1	0	0
P1071 P3-38 DO YOU REMOVE OR REPLACE MAGNETRON COMPONENTS	0	0	0	0	1	0	0
P1072 P3-39 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS COLLECTOR PLATES	1	0	0	1	1	1	0
P1073 P3-40 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER CAVITIES	0	0	0	0	1	1	0
P1074 P3-41 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER GRIDS	0	0	0	0	1	1	0
P1075 P3-42 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS FEEDBACK LOOPS	0	0	0	0	1	1	0
P1076 P3-43 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS DRIFT SPACES	0	0	0	0	1	1	0
P1077 P3-44 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER GRIDS	0	0	0	0	1	1	0
P1078 P3-45 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER CAVITIES	0	0	0	0	1	1	0
P1079 P3-46 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CONTROL GRIDS	0	0	0	0	1	1	0
P1080 P3-47 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATHODES	0	0	0	0	1	1	0
P1081 P3-48 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON REFELLER (REFLECTOR) PLATES	1	0	0	1	1	1	0
P1082 P3-49 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRIDS	1	0	0	1	1	1	0
P1083 P3-50 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRID CAVITY GAPS	1	0	0	1	1	1	0
P1084 P3-51 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON RESONANT CAVITIES	1	0	0	1	1	1	0
P1085 P3-52 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON MAGNETIC COUPLING LOOPS	1	0	0	1	1	1	0
P1086 P3-53 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON FILAMENTS	1	0	0	1	1	1	0
P1087 P3-54 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON CATHODES	1	0	0	1	1	1	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007
P1088	P3-55 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON OUTPUT LEADS	1	0	0	1	1	1	0
P1089	P3-56 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES FILAMENTS	1	0	0	1	1	1	0
P1090	P3-57 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES CATHODES	1	0	0	1	1	1	0
P1091	P3-58 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MODULATOR GRIDS	1	0	0	1	1	1	0
P1092	P3-59 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ANODES	1	0	0	1	1	1	0
P1093	P3-60 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES HELIXES	1	0	0	0	1	1	0
P1094	P3-61 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES COLLECTORS	1	0	0	1	1	1	0
P1095	P3-62 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MAGNETS	1	0	0	1	1	1	0
P1096	P3-63 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ATTENUATORS	1	0	0	1	1	1	0
P1097	P3-64 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE CIRCULATORS	1	0	0	0	1	0	1
P1098	P3-65 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER SIGNAL CAVITIES	1	0	0	1	1	0	0
P1099	P3-66 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER IDLER CAVITIES	0	0	0	0	1	0	0
P1100	P3-67 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER VARACTOR DIODES	1	0	0	1	1	1	1
P1101	P3-68 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE ISOLATORS	0	0	0	0	1	0	0
P1102	P3-69 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER REVERSE-BIAS BATTERIES	0	0	0	1	1	0	0
P1103	P3-70 DO YOU PERFORM TASKS ON ANODES	0	0	0	0	1	1	0
P1104	P3-71 DO YOU PERFORM TASKS ON ANODE COOLING PINS	0	0	0	0	1	1	0
P1105	P3-72 DO YOU PERFORM TASKS ON COUPLING LOOPS	1	0	0	1	1	1	0
P1106	P3-73 DO YOU PERFORM TASKS ON HEATER LEADS	0	0	0	0	1	1	0
P1107	P3-74 DO YOU PERFORM TASKS ON RESONANT CAVITIES	0	0	0	0	1	1	0
P1108	P3-75 DO YOU PERFORM TASKS ON CATHODES	1	0	0	1	1	1	0
P1109	P3-76 DO YOU PERFORM TASKS ON MAGNETS	1	0	0	1	1	1	0
Q1110	Q1-01 DO YOU USE OR REFER TO STORAGE REGISTERS	14	29	18	8	19	9	17
Q1111	Q1-02 DO YOU USE OR REFER TO SHIFT REGISTERS	14	34	18	8	20	9	14
Q1112	Q1-03 DO YOU USE OR REFER TO LOGIC SYMBOLS OF SHIFT REGISTERS	12	19	18	6	18	7	14
Q1113	Q1-04 DO YOU USE OR REFER TO LOGIC SYMBOLS OF STORAGE REGISTERS	12	17	18	6	17	7	16
Q1114	Q1-05 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	11	17	16	6	16	7	13
Q1115	Q1-06 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF REGISTERS	11	9	16	6	15	8	16

REGISTERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
Q1116	Q1-07 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES	10	19	14	5	16	7	16	
Q1117	Q2-01 DO YOU WORK WITH DIGITAL COUNTERS, REGISTERS, OR STORAGE DEVICES IN YOUR PRESENT JOB	20	29	20	12	19	23	27	
Q1118	Q2-02 DO YOU USE OR REFER TO DELAY LINES	5	4	5	3	8	6	7	
Q1119	Q2-03 DO YOU USE OR REFER TO MAGNETIC CORES	10	4	9	7	8	15	19	
Q1120	Q2-04 DO YOU USE OR REFER TO MAGNETIC DRUMS	5	6	7	5	4	6	1	STORAGE DEVICES
Q1121	Q2-05 DO YOU USE OR REFER TO MAGNETIC TAPES	4	1	2	4	6	3	1	
Q1122	Q2-06 DO YOU USE OR REFER TO ACCESS TIME OR SPEED OR MEMORY SYSTEMS	5	6	4	6	6	8	3	
Q1123	Q2-07 DO YOU USE OR REFER TO WORD CAPACITY OF MEMORY SYSTEMS	5	4	7	6	6	5	6	
Q1124	Q2-08 DO YOU USE OR REFER TO VOLATILITY OF MEMORY SYSTEMS	3	0	4	3	3	2	4	
Q1125	Q2-09 DO YOU USE OR REFER TO LOGIC SYMBOL OF DELAY LINES	4	1	2	4	7	2	6	
Q1126	Q3-01 IN YOUR PRESENT JOB, DO YOU WORK WITH DIGITAL-TO-ANALOG (D/A) CONVERTERS, ANALOG-TO-DIGITAL (A/D)	10	11	14	15	12	4	13	
Q1127	Q3-02 DO YOU COMPUTE OUTPUT VOLTAGES FOR ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT	2	0	4	3	3	1	1	
Q1128	Q3-03 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE COUNT IN ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A)	1	0	2	1	2	1	1	
Q1129	Q3-04 DO YOU COMPUTE ANALOG VOLTAGES FOR GIVEN BINARY COUNTS IN ELECTRONIC DIGITAL-TO-ANALOG (D/A) CONVERTERS	2	0	2	2	2	1	3	DIGITAL TO ANALOG CONVERTERS
Q1130	Q3-05 DO YOU PERFORM SAMPLE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	2	0	4	2	3	1	1	
Q1131	Q3-06 DO YOU PERFORM HOLD FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	2	0	4	2	3	1	1	
Q1132	Q3-07 DO YOU PERFORM COMPARE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	2	1	4	2	3	1	1	
Q1131	Q3-08 DO YOU PERFORM DIGITIZE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	2	0	4	2	3	1	1	
Q1134	Q3-09 DO YOU PERFORM DON'T REMEMBER WHICH FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER	3	3	4	5	3	1	4	
Q1135	Q3-10 DO YOU USE OR REFER TO SAMPLE FUNCTION OF A/D CONVERTERS	2	1	4	3	3	1	0	
Q1136	Q3-11 DO YOU USE OR REFER TO HOLD FUNCTION OF A/D CONVERTERS	2	1	2	2	3	1	0	
Q1137	Q3-12 DO YOU USE OR REFER TO COMPARE FUNCTION OF A/D CONVERTERS	2	3	2	3	2	1	0	
Q1138	Q3-13 DO YOU USE OR REFER TO DIGITAL FUNCTION OF A/D CONVERTERS	3	1	5	5	3	1	0	
Q1139	Q3-14 DO YOU PERFORM ANY TASKS ON MECHANICAL ANALOG-TO-DIGITAL (A/D) CONVERTERS	2	0	2	4	4	1	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
R1140	R1-01 DO YOU WORK WITH PHANTASTRON CIRCUITRY IN YOUR PRESENT JOB	1	0	2	0	1	1	1	PHANTASTRONS
R1141	R2-01 IN YOUR PRESENT JOB DO YOU WORK WITH SCHMITT TRIGGER CIRCUITS	13	7	20	11	14	15	20	
R1142	R2-02 DO YOU TRACE DATA FLOW THROUGH SCHMITT TRIGGER SCHEMATIC DIAGRAMS	11	3	18	8	11	11	20	SCHMITT TRIGGERS
R1143	R2-03 DO YOU USE OR REFER TO SCHMITT TRIGGER LOGIC SYMBOLS	9	3	13	8	11	9	16	
R1144	R3-01 IN YOUR PRESENT JOB DO YOU FABRICATE MULTICONDUCTOR CABLES	66	60	61	71	70	63	70	
R1145	R3-02 DO YOU FABRICATE COAXIAL CABLES	79	76	70	82	82	77	84	CABLE FABRICATION
S1146	S1-01 IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS ON VISUAL READOUT SYSTEMS	17	14	18	16	20	16	23	
S1147	S1-02 DO YOU PERFORM ANY TASKS ON NIXIE LIGHTS OR NIXIE LIGHT DECODER SYSTEMS	6	4	5	4	11	4	9	INPUT/OUTPUT DEVICES
S1148	S1-03 DO YOU ANALYZE NIXIE LIGHT DECODER SYSTEMS USING BOOLEAN ALGEBRA	2	1	5	0	4	2	4	
S1149	S2-01 DO YOU WORK WITH PHOTO TUBES IN YOUR PRESENT JOB	2	0	4	2	2	2	4	PHOTO SENSITIVE DEVICES
S1150	S3-01 IN YOUR PRESENT JOB DO YOU WORK WITH CHOPPER CIRCUITS	28	30	20	26	29	30	39	
S1151	S3-02 DO YOU MEASURE EXCITATION FREQUENCIES	8	13	9	7	10	4	13	
S1152	S3-03 DO YOU MEASURE VOLTAGE-CURRENT PHASE RELATIONSHIPS	9	9	9	7	12	8	13	
S1153	S3-04 DO YOU USE OR REFER TO EXCITATION FREQUENCIES	9	16	7	8	11	4	11	
S1154	S3-05 DO YOU USE OR REFER TO VOLTAGE-CURRENT PHASE RELATIONSHIPS	10	10	7	9	12	8	13	SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS)
S1155	S3-06 DO YOU USE SERVOS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	24	26	16	23	25	24	27	
S1156	S3-07 DO YOU USE DETECTORS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	21	21	16	24	17	20	27	
S1157	S3-08 DO YOU USE ERROR SIGNAL DEVICES IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	23	23	16	24	19	27	33	
S1158	S3-09 DO YOU USE COMPARISON CIRCUITS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	18	20	16	18	16	16	29	
T1159	T1-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH INFRARED SYSTEMS	1	0	0	0	1	2	0	
T1160	T1-02 DO YOU INSPECT INFRARED SYSTEMS	0	0	0	0	0	0	0	
T1161	T1-03 DO YOU CLEAN INFRARED SYSTEMS	0	0	0	0	0	0	0	
T1162	T1-04 DO YOU ADJUST OR CALIBRATE INFRARED SYSTEMS	0	0	0	0	0	0	0	
T1163	T1-05 DO YOU OPERATE INFRARED SYSTEMS	0	0	0	0	0	1	0	
T1164	T1-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF INFRARED SYSTEMS	0	0	0	0	0	1	0	INFRARED
T1165	T1-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF INFRARED SYSTEMS	0	0	0	0	0	0	0	
T1166	T1-08 DO YOU TROUBLESHOOT DOWN TO INFRARED SYSTEM COMPONENT PARTS	0	0	0	0	0	0	0	
T1167	T1-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF INFRARED SYSTEMS	0	0	0	0	0	0	0	
T1168	T1-10 DO YOU REMOVE OR REPLACE INFRARED SYSTEM COMPONENT PARTS	0	0	0	0	0	0	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
T1169	T1-11 DO YOU USE OR REFER TO FAR REGION	0	0	0	0	0	0	0	
T1170	T1-12 DO YOU USE OR REFER TO INTERMEDIATE REGION	0	0	0	0	0	0	0	
T1171	T1-13 DO YOU USE OR REFER TO NEAR REGION	0	0	0	0	0	0	0	
T1172	T1-14 DO YOU USE OR REFER TO MICRON	0	0	0	0	0	0	0	
T1173	T1-15 DO YOU USE OR REFER TO GRAY BODIES	0	0	0	0	0	1	0	
T1174	T1-16 DO YOU USE OR REFER TO BLACK BODIES	0	0	0	0	0	1	0	
T1175	T1-17 DO YOU USE OR REFER TO ABSORPTION	0	0	0	0	0	0	0	
T1176	T1-18 DO YOU USE OR REFER TO SCATTERING	0	0	0	0	0	0	0	
T1177	T1-19 DO YOU USE OR REFER TO ABSOLUTE ZERO	0	0	0	0	0	0	0	
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	0	0	
T1180	T1-22 DO YOU PERFORM TASKS ON ERECTOR LENSES	0	0	0	0	0	0	0	
T1181	T1-23 DO YOU PERFORM TASKS ON OCULAR LENSES	0	0	0	0	0	0	0	
T1182	T1-24 DO YOU PERFORM TASKS ON CORRECTION LENSES	0	0	0	0	0	0	0	
T1183	T1-25 DO YOU PERFORM TASKS ON FILTERS	0	0	0	0	0	0	0	
T1184	T1-26 DO YOU PERFORM TASKS ON SPHERICAL MIRRORS	0	0	0	0	0	0	0	
T1185	T1-27 DO YOU PERFORM TASKS ON PLANE MIRRORS	0	0	0	0	0	1	0	
T1186	T2-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH LASERS	0	0	0	0	0	0	0	
T1187	T2-02 DO YOU INSPECT LASER SYSTEMS	0	0	0	0	0	0	0	
T1188	T2-03 DO YOU CLEAN LASER SYSTEMS	0	0	0	0	0	0	0	
T1189	T2-04 DO YOU OPERATE LASER SYSTEMS	0	0	0	0	0	0	0	
T1190	T2-05 DO YOU OPERATE LASER SYSTEMS	0	0	0	0	0	0	0	LASERS
T1191	T2-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF LASER SYSTEMS	0	0	0	0	0	0	0	
T1192	T2-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF LASER SYSTEMS	0	0	0	0	0	0	0	
T1193	T2-08 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF LASER SYSTEMS	0	0	0	0	0	0	0	
T1194	T2-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF LASER SYSTEMS	0	0	0	0	0	0	0	
T1195	T2-10 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF LASER SYSTEMS	0	0	0	0	0	0	0	
T1196	T2-11 DO YOU USE OR REFER TO ANGSTROMS (A)	0	0	0	0	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	0	0	0	0	
T1199	T2-14 DO YOU USE OR REFER TO EXCITED STATE	0	0	0	0	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	0	0	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	0	0	0	0	
T1204	T2-19 DO YOU USE OR REFER TO COHERENCE OR INCOHERENCE	0	0	0	0	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	0	0	0	0	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	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
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	0	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	2	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	1	0	2	0	2	0	3	
T1221	T3-02 DO YOU INSPECT DVST OR MMST	1	0	2	0	1	0	1	
T1222	T3-03 DO YOU CLEAN DVST OR MMST	1	0	2	0	1	0	1	
T1223	T3-04 DO YOU ADJUST OR CALIBRATE DVST OR MMST	0	0	2	0	1	0	1	
T1224	T3-05 DO YOU OPERATE SYSTEMS THAT CONTAIN DVST OR MMST	1	0	2	0	2	0	1	
T1225	T3-06 DO YOU TROUBLESHOOT DVST OR MMST CIRCUITS	0	0	0	0	1	0	1	DISPLAY TUBES
T1226	T3-07 DO YOU REMOVE OR REPLACE DVST OR MMST TUBES FROM MAJOR ASSEMBLIES OR UNITS	0	0	0	0	1	0	1	
T1227	T3-08 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF DVST	0	0	0	0	0	0	0	
T1228	T3-09 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF MMST	0	0	0	0	0	0	0	
T1229	T3-10 DO YOU PERFORM TASKS ON FLOOD GUNS	0	0	0	0	0	0	0	
T1230	T3-11 DO YOU PERFORM TASKS ON WRITE GUNS	0	0	0	0	0	0	0	
T1231	T3-12 DO YOU PERFORM TASKS ON ATTACK GUNS	0	0	0	0	0	0	0	
T1232	T3-13 DO YOU PERFORM TASKS ON ERASE GUNS	0	0	0	0	1	0	0	
T1233	T3-14 DO YOU PERFORM TASKS ON STORAGE GRIDS	0	0	2	0	1	0	0	
U1234	U1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY PROGRAMMING TASKS	7	6	4	1	5	11	20	
U1235	U1-02 DO YOU USE OR REFER TO DECIMAL SYSTEMS	4	1	0	1	4	6	14	
U1236	U1-03 DO YOU USE OR REFER TO PROGRAMS	2	4	0	0	3	3	4	
U1237	U1-04 DO YOU USE OR REFER TO HEXIDECIMAL SYSTEMS	0	0	0	0	1	0	0	
U1238	U1-05 DO YOU USE OR REFER TO 8-4-2-1 SYSTEMS	3	4	2	0	1	5	13	
U1239	U1-06 DO YOU USE OR REFER TO FOUR SYSTEMS	0	0	0	0	0	0	0	
U1240	U1-07 DO YOU USE OR REFER TO BINARY SYSTEMS	5	6	2	1	5	7	16	PROGRAMMING
U1241	U1-08 DO YOU USE OR REFER TO TIME-SHARING	1	3	0	0	1	0	0	
U1242	U1-09 DO YOU USE OR REFER TO DATA WORDS	2	6	4	1	2	2	3	
U1243	U1-10 DO YOU USE OR REFER TO ADDRESS WORDS	2	6	0	0	3	2	1	
U1244	U1-11 DO YOU USE OR REFER TO ADDRESS/SUBADDRESS	2	6	0	0	3	1	1	
U1245	U1-12 DO YOU USE OR REFER TO STEERING/INFORMATION	1	1	0	0	2	1	3	
U1246	U1-13 DO YOU USE OR REFER TO INFORMATION WORDS	1	4	0	1	2	0	4	
U1247	U1-14 DO YOU PERFORM TASKS ON SINGLE LEVEL PROGRAMMING	2	4	2	0	2	4	6	
U1248	U1-15 DO YOU PERFORM TASKS ON MULTI-LEVEL PROGRAMMING	1	4	0	0	2	0	3	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	
U1249	U1-16 DO YOU PERFORM TASKS ON INPUT DEVICES	2	3	4	0	3	2	4	
U1250	U1-17 DO YOU PERFORM TASKS ON STORAGE DEVICES	3	3	4	0	3	4	7	
U1251	U1-18 DO YOU PERFORM TASKS ON ARITHMETIC SECTIONS	1	1	4	0	2	1	3	
U1252	U1-19 DO YOU PERFORM TASKS ON CONTROL SECTIONS	1	0	4	0	2	2	3	
U1253	U1-20 DO YOU PERFORM TASKS ON OUTPUT DEVICES	1	1	4	0	2	1	3	
U1254	U1-21 DO YOU PERFORM TASKS ON POWER SUPPLIES	2	1	4	0	2	2	3	
U1255	U2-01 DO YOU USE DECIBELS TO EXPRESS AMPLIFICATION AND ATTENUATION	72	73	79	67	73	70	81	
U1256	U2-02 DO YOU USE LOGARITHMS TO COMPUTE OUTPUT POWER IN DECIBELS	8	6	16	6	11	8	11	DB AND POWER RATIOS
U1257	U2-03 DO YOU USE LOGARITHMS TO COMPUTE ATTENUATION IN DECIBELS	8	6	20	6	10	8	11	
U1258	U2-04 DUMMY TASK TO IDENTIFY INCUMBENTS WHO PERFORMED NO TASKS	1	0	0	1	0	2	0	



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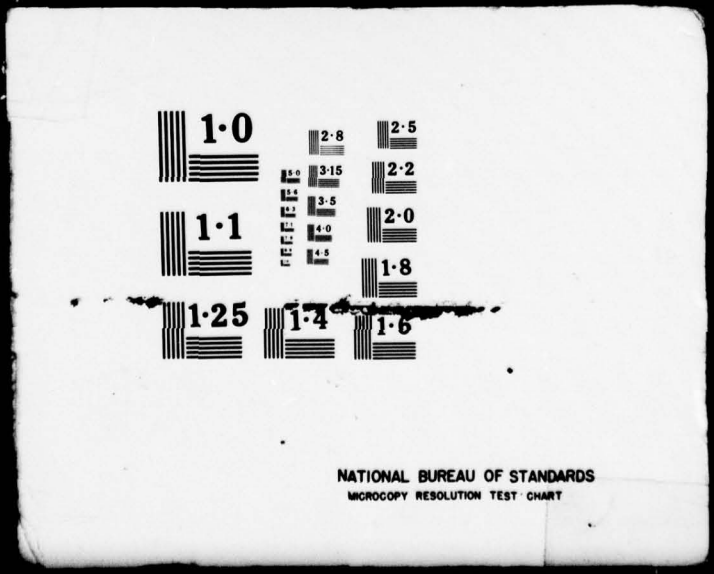
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Avionic Communications Career Ladder
AFSC 328X0

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

This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned to Avionic Communications Specialty (AFSC 328X0). The report gives a detailed listing of the technical tasks and knowledge needed to perform the jobs within the specialty or career ladder.

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

This specialty has the following functions:

Installs, maintains, modifies, troubleshoots, and repairs avionic communications equipment and test equipment. Performs preventive maintenance on avionic communications equipment. Installs avionic communications equipment. Repairs avionic communications equipment. Maintains inspection and maintenance records.