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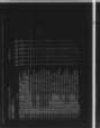



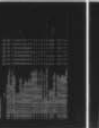










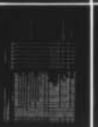

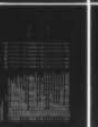
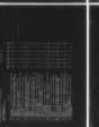
















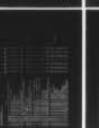


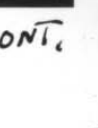
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ELECTRICAL SWITCHING SYSTEMS REPAIRMAN AFSC 36252.(U)
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ELECTRONIC PRINCIPLES

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AFSC 36252

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PREFACE

This report presents a summary of the results of a detailed Air Force Electronic Principles Survey of the Electrical Switching Systems Repairman, AFSC 36252.

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 Elena J. Weber. All are members of the Occupational Survey Branch, USAF Occupational Measurement Center, Lackland AFB, Texas.

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

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

This report has been reviewed and is approved.

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

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

ELECTRONIC PRINCIPLES OCCUPATIONAL SURVEY REPORT
ELECTRICAL SWITCHING SYSTEMS REPAIRMAN
AFSC 36252

INTRODUCTION

↓ This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned as Electrical Switching Systems Repairman (AFSC 36252). The data for this report were collected during the period April through June 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 36252 airmen worldwide. Responses from 68 individuals represented 30 percent of the total of all AFSC 36252 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	C123	6
9	MAGNETISM	C171	7
10	RCL CIRCUITS	D185	8
11	SERIES AND PARALLEL RESONANCE (TIME CONSTANTS)	D229	10
12	FILTERS	D239	10
13	COUPLING	E261	11
14	SOLDERING	E273	11
15	RELAYS	E295	12
16	MICROPHONES	F314	12
17	SPEAKERS	F327	13
18	OSCILLOSCOPES	F342	13
19	SEMICONDUCTOR DIODES	G354	13
20	TRANSISTORS	G404	15
21	TRANSISTOR AMPLIFIERS	G428	16
22	SOLID-STATE SPECIAL PURPOSE DEVICES	H477	19
23	POWER SUPPLIES	H483	19
24	OSCILLATORS	H512	19
25	MULTIVIBRATORS	I539	20
26	LIMITERS AND CLAMPERS	I555	21
27	ELECTRON TUBES	I565	21
28	ELECTRON TUBE AMPLIFIERS AND CIRCUITS	J609	22
29	SPECIAL PURPOSE ELECTRON TUBES	J616	23
30	HETERODYNING, MODULATION, AND DEMODULATION	J632	23
31	AM SYSTEMS	K638	23
32	FM SYSTEMS	K666	24

TABLE 1 (CONTINUED)

EPI SUBJECT AREAS

<u>SEQUENCE OF SUBJECT AREAS</u>	<u>SUBJECT AREA TITLE</u>	<u>BEGINNING ITEM NUMBER</u>	<u>GPSUM PAGE NUMBER</u>
33	NUMBERING SYSTEMS	K685	25
34	LOGIC FUNCTIONS	L695	25
35	BOOLEAN EQUATIONS	L708	26
36	COUNTERS	L733	27
37	TIMING CIRCUITS	M757	27
38	USE OF SIGNAL GENERATORS	M769	28
39	MOTORS AND GENERATORS	M779	28
40	METER MOVEMENTS	N808	29
41	SATURABLE REACTORS AND MAGNETIC AMPLIFIERS	N818	29
42	WAVESHAPING CIRCUITS	N834	30
43	SINGLE SIDEBAND SYSTEMS	O845	30
44	PULSE MODULATION SYSTEMS	O875	31
45	ANTENNAS	O914	32
46	TRANSMISSION LINES	P953	34
47	WAVEGUIDES AND CAVITY RESONATORS	P984	35
48	MICROWAVE AMPLIFIERS AND OSCILLATORS	P1034	37
49	REGISTERS	Q1110	39
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	41
59	LASERS	T1186	42
60	DISPLAY TUBES	T1220	43
61	PROGRAMMING	U1234	43
62	DB AND POWER RATIOS	U1255	44

TABLE 2
COMMAND REPRESENTATION OF SURVEY SAMPLE

COMMAND	36252	
	PERCENT ASSIGNED	PERCENT OF SAMPLE
ADC	2	2
ATC	6	5
AFCS	69	46
TAC	14	5
USAFE	9	35
OTHER	---	7
TOTAL	100	100

Total Assigned - 226
 Total Sampled - 68
 Percent Sampled - 30%*

*NOTE: Only a 40 percent sampling of this career specialty had been ordered. Of the booklets distributed only 60 percent were returned resulting in the low percent sampled figure.

PRESENTATION 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. The percentage of survey respondents indicating use of specific electronic principles ranged from high in areas such as Soldering (pp. 11-12) and Registers (pp. 39-40) to low in areas such as Single Sideband Systems (pp. 30-31) and Antennas (pp. 32-34). Additional AFSC 362X2 data can be obtained upon request to the Chief, Occupational Survey Branch (OMY).

APPENDIX

PCT MBR'S RESPONDING 'YES' BY SELECTED GRPS

GPSUM2 PAGE 1

TABULATION OF ELECTRONIC PRINCIPLES UTILIZATION DATA FOR SELECTED GROUPS
IN THE 362X2 CAREER FIELD.

REPORTS ON THE FOLLOWING GROUPS WERE REQUESTED

GROUP IDENTITY = SPC026	ALL AIRMEN DAFSC 36252	CONTAINING	68 MEMBERS.
GROUP IDENTITY = SPC027	ALL AIRMEN DAFSC 36252 STATIONED IN CONUS	CONTAINING	13 MEMBERS.
GROUP IDENTITY = SPC028	ALL AIRMEN DAFSC 36252 STATIONED OVERSEAS	CONTAINING	55 MEMBERS.
GROUP IDENTITY = SPC029	ALL AIRMEN DAFSC 36252 ASSIGNED TO ATC	CONTAINING	3 MEMBERS.
GROUP IDENTITY = SPC030	ALL AMN DAFSC 36252 ASSIGNED TO AFCS	CONTAINING	31 MEMBERS.
GROUP IDENTITY = SPC031	ALL AIRMEN DAFSC 36252 ASSIGNED TO TAC	CONTAINING	3 MEMBERS.
GROUP IDENTITY = SPC032	ALL AIRMEN DAFSC 36252 ASSIGNED TO USAFE	CONTAINING	24 MEMBERS.

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task ID	Description	SPC 026	SPC 027	SPC 028	SPC 029	SPC 030	SPC 031	SPC 032
A 1	AI-01 DO YOU USE PUBLICATIONS, SUCH AS INSTRUMENTS, SUCH AS METERS OR OSCILLOSCOPES, IN WHICH IT IS NECESSARY TO AMPLIFY OR ATTENUATE VOLTAGE, RESISTANCE, ETC., BY POWERS OF 10.	84	92	82	100	84	100	79
A 2	AI-02 DO YOU USE PUBLICATIONS, SUCH AS A TECHNICAL ORDERS OR MAINTENANCE MANUALS, IN WHICH IT IS NECESSARY FOR YOU TO MULTIPLY OR DIVIDE BY A POWER OF 10 BEFORE YOU CAN APPLY THE INFORMATION FROM THE PUBLICATION IN A USEFUL WAY ON THE JOB.	37	23	40	33	39	0	29
A 3	AI-03 DO YOU REARRANGE AND SOLVE FORMULAS OR EQUATIONS.	47	46	47	33	52	67	33
A 4	AI-04 DO YOU CALCULATE THE SQUARE ROOT OF A QUANTITY.	15	15	15	33	6	0	17
A 5	AI-05 DO YOU SOLVE FOR UNKNOWN QUANTITIES.	31	23	33	67	23	0	33
A 6	AI-06 DO YOU CONVERT NUMBERS TO LOGARITHMS.	0	0	0	0	0	0	0
A 7	AI-07 DO YOU USE LOGARITHM TABLES IN ANY TYPE OF CALCULATIONS.	1	0	2	0	0	0	4
A 8	AI-08 DO YOU SOLVE QUADRATIC EQUATIONS.	6	0	7	0	6	0	4
A 9	AI-09 DO YOU USE THE NATURAL SYSTEM OF LOGARITHMS.	4	0	5	0	10	0	0
A 10	AI-10 DO YOU PERFORM CALCULATIONS ON VECTOR QUANTITIES.	6	15	4	33	10	0	0
A 11	AI-11 DO YOU WORK WITH TRIGONOMETRIC FUNCTIONS SUCH AS SINE, COSINE, OR TANGENT.	1	0	2	0	3	0	0
A 12	AI-12 DO YOU DETERMINE AREAS OF PLANE FIGURES.	0	0	0	0	0	0	0
A 13	AI-13 DO YOU SOLVE OR USE SIMULTANEOUS EQUATIONS.	3	0	4	0	3	0	4
A 14	AI-14 DO YOU SOLVE OR USE PROPORTIONS.	12	8	13	0	6	0	21
A 15	AZ-01 DO YOU USE THE TERM VOLTAGE OR VOLT (V).	94	100	93	100	100	100	88
A 16	AZ-02 DO YOU USE THE TERM ELECTROMOTIVE FORCE (EMF).	44	54	42	67	45	33	29
A 17	AZ-03 DO YOU USE THE TERM OHM.	94	100	93	100	100	100	88
A 18	AZ-04 DO YOU USE THE TERM ION.	15	8	14	0	19	0	8
A 19	AZ-05 DO YOU USE THE TERM DYNE.	7	0	9	0	10	0	4
A 20	AZ-06 DO YOU USE THE TERM AMPERE.	91	100	89	100	97	100	83
A 21	AZ-07 DO YOU USE THE TERM NEUTRON.	31	8	36	0	42	0	21
A 22	AZ-08 DO YOU USE THE TERM COULOMB.	19	0	24	0	29	0	8
A 23	AZ-09 DO YOU USE THE TERM PROTON.	31	8	36	0	42	0	21
A 24	A3-01 DO YOU WORK WITH RESISTORS IN YOUR PRESENT JOB.	87	85	87	67	84	100	92
A 25	A3-02 DO YOU INSPECT RESISTORS.	90	85	91	67	97	67	86
A 26	A3-03 DO YOU CLEAN RESISTORS.	63	62	64	67	65	67	54
A 27	A3-04 DO YOU ADJUST RESISTORS.	82	54	89	33	90	33	83
A 28	A3-05 DO YOU CHECK OHMIC VALUE OR RESISTORS.	91	77	95	33	97	100	92
A 29	A3-06 DO YOU REMOVE OR REPLACE RESISTORS.	90	77	93	67	90	100	92
A 30	A3-07 DO YOU USE OR REFER TO TEMPERATURE COEFFICIENTS FOR RESISTORS ON ANY TASKS YOU PERFORM.	31	54	25	67	48	0	4
A 31	A3-08 DO YOU USE OR REFER TO RESISTOR SYMBOLS SUCH AS FIXED RESISTOR SYMBOLS OR TAPPED RESISTOR SYMBOLS.	87	77	89	67	84	100	92
A 32	A3-09 DO YOU IDENTIFY OR CLASSIFY THE RESISTORS YOU WORK WITH AS CARBON, FIXED WIRE, SLIDE TAP, RHEOSTAT, OR POTENTIOMETER.	82	85	82	67	90	100	71
A 33	A3-10 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE OHMIC VALUE OF RESISTANCE.	87	85	87	67	87	100	88

DIRECT CURRENT AND VOLTAGE

RESISTANCE

MATHEMATICS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task ID	Description	SPC 026	SPC 027	SPC 028	SPC 029	SPC 030	SPC 031	SPC 032
A 34	DO YOU USE RESISTOR COLOR CODES WHICH INDICATE TOLERANCE.	78	85	76	67	84	100	67
A 35	DO YOU USE RESISTOR COLOR CODES WHICH INDICATE FAILURE RATE.	29	23	31	33	32	0	25
A 36	DO YOU MAKE DECISIONS IN WHICH YOU MUST DETERMINE HOW TWO OR MORE BATTERIES MUST BE CONNECTED TOGETHER TO ACHIEVE A SPECIFIC VOLTAGE.	43	31	45	33	42	67	42
A 37	DO YOU USE OR REFER TO THE SCHEMATIC SYMBOLS WHICH REPRESENT BATTERIES, FUSES, CONDUCTORS, LAMPS, OR SWITCHES	91	85	93	67	94	100	92
A 38	DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES RESISTIVE CIRCUITS.	47	46	47	33	58	33	33
A 39	DO YOU CALCULATE TOTAL CURRENT FOR SERIES RESISTIVE CIRCUITS.	47	46	47	33	58	33	33
A 40	DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES RESISTIVE CIRCUITS.	50	46	51	33	58	33	42
A 41	DO YOU CALCULATE POWER DISSIPATION FOR SERIES RESISTIVE CIRCUITS.	35	38	35	0	48	33	17
A 42	DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES PARALLEL RESISTIVE CIRCUITS.	44	46	44	33	58	33	25
A 43	DO YOU CALCULATE TOTAL CURRENT FOR SERIES PARALLEL RESISTIVE CIRCUITS.	44	46	44	33	58	33	25
A 44	DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES PARALLEL RESISTIVE CIRCUITS.	47	46	47	33	58	33	33
A 45	DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR SERIES PARALLEL RESISTIVE CIRCUITS.	44	46	44	33	58	33	25
A 46	DO YOU CALCULATE POWER DISSIPATION FOR SERIES PARALLEL RESISTIVE CIRCUITS.	32	38	31	0	45	33	13
A 47	DO YOU CALCULATE TOTAL RESISTANCE FOR PARALLEL RESISTIVE CIRCUITS.	44	46	44	33	58	33	25
A 48	DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RESISTIVE CIRCUITS.	44	46	44	33	58	33	25
A 49	DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR PARALLEL RESISTIVE CIRCUITS.	43	46	42	33	55	33	25
A 50	DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR PARALLEL RESISTIVE CIRCUITS.	43	46	42	33	55	33	25
A 51	DO YOU CALCULATE POWER DISSIPATION FOR PARALLEL RESISTIVE CIRCUITS.	32	38	31	0	45	33	13
B 52	DO YOU MEASURE RESISTANCE.	96	92	96	100	97	100	96
B 53	DO YOU REPAIR OHMMETERS.	7	0	9	0	10	0	4
B 54	DO YOU MEASURE VOLTAGE.	96	100	96	100	100	100	92
B 55	DO YOU REPAIR VOLTMETERS.	9	0	11	0	10	0	4
B 56	DO YOU REPAIR AMMETERS.	7	0	9	0	10	0	0
B 57	DO YOU MEASURE CURRENT.	91	92	91	100	97	67	88
B 58	DO YOU USE MULTIMETERS.	94	100	93	100	97	100	92
B 59	DO YOU DIRECTLY USE A QUANTITY OF CHARGE CALLED A COULOMB.	7	0	9	0	3	0	8
B 60	DO YOU READ SCHEMATICS.	96	100	95	100	100	100	92

MULTIMETER USES

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC 026	SPC 027	SPC 028	SPC 029	SPC 030	SPC 031	SPC 032	SPC 033	
C 92 CI-01 DO YOU WORK WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS IN YOUR PRESENT JOB.	82	69	86	0	90	100	86	86	CAPACITORS AND CAPACITIVE REACTANCE
C 93 CI-02 DO YOU INSPECT CAPACITORS.	81	69	84	33	87	67	83		
C 94 CI-03 DO YOU CLEAN CAPACITORS.	62	46	65	33	68	67	54		
C 95 CI-04 DO YOU ADJUST CAPACITORS.	32	31	33	0	35	33	25		
C 96 CI-05 DO YOU TEST CAPACITORS.	72	62	75	33	87	33	63		
C 97 CI-06 DO YOU DISCHARGE CAPACITORS.	72	54	76	0	77	67	75		
C 98 CI-07 DO YOU REMOVE OR REPLACE CAPACITORS.	82	69	85	33	90	100	79		
C 99 CI-08 DO YOU USE OR REFER TO DISTRIBUTED CAPACITANCE.	16	8	18	0	23	0	4		
C 100 CI-09 DO YOU USE OR REFER TO ORBITAL STRESS OF ELECTRONS IN A DIELECTRIC.	6	0	7	0	6	0	0		
C 101 CI-10 DO YOU USE OR REFER TO FARADS, MICROFARADS, OR PICOFARADS.	75	69	76	33	77	67	79		
C 102 CI-11 DO YOU USE OR REFER TO CAPACITANCE.	74	69	75	33	81	67	71		
C 103 CI-12 DO YOU USE OR REFER TO DIELECTRIC CONSTANT	13	15	13	0	23	0	0		
C 104 CI-13 DO YOU USE OR REFER TO WORKING VOLTAGE RATING OF CAPACITORS	51	38	55	33	52	33	50		
C 105 CI-14 DO YOU USE OR REFER TO CAPACITIVE REACTANCE	37	46	35	33	48	33	21		
C 106 CI-15 DO YOU USE OR REFER TO CAPACITOR COLOR CODES	29	8	35	0	39	0	21		
C 107 CI-16 DO YOU WORK WITH CAPACITORS IN DC CIRCUITS	87	62	93	0	97	67	92		
C 108 CI-17 DO YOU WORK WITH CAPACITORS IN AC CIRCUITS	68	54	71	0	71	67	71		
C 109 CI-18 DO YOU WORK WITH CAPACITORS IN CIRCUITS WITH BOTH DC AND AC CIRCUITS	68	54	71	33	68	33	75		
C 110 CI-19 DO YOU WORK WITH CAPACITORS IN DON'T REMEMBER WHICH CAPACITORS	10	15	9	0	23	0	0		
C 111 CI-20 DO YOU CALCULATE CAPACITANCE FOR PARTICULAR CAPACITORS USING FORMULAS	21	15	22	0	32	0	8		
C 112 CI-21 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS DIRECTLY PROPORTIONAL TO THE DIELECTRIC CONSTANT	7	0	9	0	13	0	0		
C 113 CI-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS INVERSELY PROPORTIONAL TO THE DIELECTRIC THICKNESS	7	0	9	0	13	0	0		
C 114 CI-23 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES	29	31	29	0	39	33	17		
C 115 CI-24 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN PARALLEL	31	31	31	0	39	33	17		
C 116 CI-25 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES-PARALLEL CIRCUITS	29	31	29	0	35	33	17		
C 117 CI-26 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT DOES NOT FLOW THROUGH CAPACITORS, IT ONLY APPEARS TO DO SO	31	23	33	0	39	33	17		
C 118 CI-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEADS VOLTAGE IN AC CAPACITOR CIRCUITS	37	38	36	0	45	67	25		
C 119 CI-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITIVE REACTANCE IS INVERSELY PROPORTIONAL TO FREQUENCY	24	23	24	0	35	0	13		
C 120 CI-29 DO YOU CALCULATE CAPACITIVE REACTANCE	25	23	25	0	35	0	13		

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DT-TSK	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	026	027	028	029	030	031	032	033	034
C 121 C1-J0 DO YOU WORK WITH ROTOR-STATOR (VARIABLE) CAPACITORS	21	23	20	33	19	0	17		
C 122 C1-J1 DO YOU WORK WITH COMPRESSION (TRIMMER) CAPACITORS	15	8	14	0	13	0	13		
C 123 C1-J2 DO YOU WORK WITH ELECTROLYTIC (FIXED) CAPACITORS	82	49	85	0	94	100	79		
C 124 C1-J3 DO YOU WORK WITH PAPER (FIXED) CAPACITORS	76	69	78	33	77	67	83		
C 125 C1-J4 DO YOU WORK WITH MICA (FIXED) CAPACITORS	63	38	69	0	68	33	67		
C 126 C1-J5 DO YOU WORK WITH CERAMIC (FIXED) CAPACITORS	72	54	74	0	81	100	67		
C 127 C1-J6 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF CAPACITORS	15	8	16	0	19	33	13		
C 128 C2-01 DO YOU WORK WITH TRANSFORMERS IN YOUR PRESENT JOB	72	54	74	0	77	100	71		
C 129 C2-02 DO YOU INSPECT TRANSFORMERS	74	54	78	0	84	67	71		
C 130 C2-03 DO YOU CLEAN TRANSFORMERS	57	38	62	0	68	67	46		
C 131 C2-04 DO YOU ADJUST TRANSFORMERS	41	31	44	0	58	33	21		
C 132 C2-05 DO YOU TROUBLESHOOT TRANSFORMERS	66	46	71	0	77	67	58		
C 133 C2-06 DO YOU REMOVE OR REPLACE COMPLETE TRANSFORMERS	68	54	71	0	77	100	63		
C 134 C2-07 DO YOU REMOVE OR REPLACE TRANSFORMER PARTS, SUCH AS THE PRIMARY WINDING	13	0	16	0	23	0	0		
C 135 C2-08 DO YOU MAKE A DISTINCTION BETWEEN MUTUAL INDUCTION AND MUTUAL INDUCTANCE (M)	6	0	7	0	10	0	0		
C 136 C2-09 DO YOU USE THE SYMBOL FOR MUTUAL INDUCTANCE, M	7	8	7	0	10	33	0		
C 137 C2-10 DO YOU REFER TO OR USE THE COEFFICIENT OF COUPLING WHEN WORKING WITH TRANSFORMERS	12	0	15	0	13	0	8		
C 138 C2-11 DO YOU CALCULATE TURNS RATIOS FOR TRANSFORMERS USING CURRENT OR VOLTAGE RATIOS	28	8	33	0	48	0	8		
C 139 C2-12 DO YOU REFER TO REFLECTED IMPEDANCE WHEN WORKING WITH TRANSFORMERS	10	0	13	0	16	0	0		
C 140 C2-13 DO YOU CALCULATE IMPEDANCE INTERACTIONS FOR TRANSFORMERS	7	0	9	0	6	0	0		
C 141 C2-14 DO YOU WORK WITH AUTOTRANSFORMERS	26	23	27	0	32	0	21		
C 142 C2-15 DO YOU WORK WITH POWER TRANSFORMERS	65	46	69	0	77	47	54		
C 143 C2-16 DO YOU WORK WITH AUDIO TRANSFORMERS	54	38	58	0	55	33	63		
C 144 C2-17 DO YOU WORK WITH RADIO FREQUENCY TRANSFORMERS	10	15	9	0	13	0	8		
C 145 C2-18 DO YOU WORK WITH DON'T REMEMBER WHAT TYPE OF TRANSFORMERS	18	23	16	0	26	67	8		
C 146 C2-19 DO YOU CHECK TRANSFORMERS FOR OPEN WINDINGS BY MEASURING RESISTANCE	68	38	75	0	74	100	67		
C 147 C2-20 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING RESISTANCE	65	38	71	0	74	100	63		
C 148 C2-21 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING OUTPUT VOLTAGES	63	54	65	0	90	67	42		
C 149 C2-22 DO YOU MEASURE RESISTANCE OF TRANSFORMER WINDINGS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO	34	15	38	0	48	33	17		
C 150 C2-23 DO YOU MEASURE OUTPUT VOLTAGE OF TRANSFORMERS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO	40	23	44	0	55	33	25		
C 151 C2-24 DO YOU REFER TO BASIC TRANSFORMER SCHEMATIC SYMBOLS FOR TRANSFORMERS	74	62	74	0	81	100	71		

TRANSFORMERS

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	026	027	028	029	030	031	032	033	034	035	036	037	038	039	040	041	042	043	044	045
C 152 C2-25 DO YOU REFER TO MULTIPLE SECONDARY-WINDINGS SCHEMATIC SYMBOLS FOR TRANSFORMERS	53	38	56	0	52	67	58													
C 153 C2-26 DO YOU REFER TO MULTIPLE TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS	62	54	64	0	71	67	54													
C 154 C2-27 DO YOU REFER TO CENTER TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS	63	46	67	0	68	67	63													
C 155 C2-28 DO YOU REFER TO AIR CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS	34	15	38	0	35	33	33													
C 156 C2-29 DO YOU REFER TO IRON CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS	47	23	53	0	52	33	46													
C 157 C2-30 DO YOU REFER TO COMBINATIONS OF THE ABOVE SCHEMATIC SYMBOLS FOR TRANSFORMERS	44	31	47	0	48	33	38													
C 158 C2-31 DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING SCHEMATIC SYMBOLS	32	23	35	0	32	67	29													
C 159 C2-32 DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN TRANSFORMERS YOU WORK WITH	26	15	29	0	35	33	13													
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 FOR TRANSFORMERS	35	23	38	0	45	67	21													
C 161 C2-34 DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN RATIOS FOR TRANSFORMERS	38	23	42	0	52	67	13													
C 162 C2-35 DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS USING TURNS RATIOS	32	23	35	0	52	67	8													
C 163 C2-36 DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS USING TURNS RATIOS	28	15	31	0	39	67	13													
C 164 C2-37 DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH THREE PHASE TRANSFORMERS	19	8	22	0	19	0	17													
C 165 C2-38 DO YOU INSPECT THREE PHASE TRANSFORMERS	9	0	11	0	10	0	4													
C 166 C2-39 DO YOU CLEAN OR LUBRICATE THREE PHASE TRANSFORMERS	7	8	7	0	10	0	0													
C 167 C2-40 DO YOU ADJUST THREE PHASE TRANSFORMERS	4	0	5	0	6	0	0													
C 168 C2-41 DO YOU TROUBLESHOOT THREE PHASE TRANSFORMERS	9	0	11	0	10	0	8													
C 169 C2-42 DO YOU REMOVE OR REPLACE COMPLETE THREE PHASE TRANSFORMERS	7	0	9	0	6	0	8													
C 170 C2-43 DO YOU REMOVE OR REPLACE THREE PHASE TRANSFORMER PARTS SUCH AS WINDINGS	4	0	5	0	6	0	0													
C 171 C3-01 DO YOU USE OR REFER TO PERMANENT MAGNETS	34	23	34	33	32	67	25													
C 172 C3-02 DO YOU USE OR REFER TO TEMPORARY MAGNETS	37	23	40	33	39	67	25													
C 173 C3-03 DO YOU USE OR REFER TO RETENTIVITY OF MAGNETIC MATERIALS	21	15	22	33	23	33	8													
C 174 C3-04 DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC MATERIALS	21	23	20	33	26	33	4													
C 175 C3-05 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS	24	23	24	33	29	33	8													
C 176 C3-06 DO YOU USE OR REFER TO RESIDUAL MAGNETISM	44	46	44	33	61	67	17													
C 177 C3-07 DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE OR FLUX	37	54	33	67	48	100	8													
C 178 C3-08 DO YOU USE OR REFER TO WEBER'S THEORY OF MAGNETISM	6	0	7	0	13	0	0													

MAGNETISM

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

0Y-TSX

	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	026	027	028	029	030	031	032					
C 179 C3-09 DO YOU USE ON REFER TO DOMAIN THEORY OF MAGNETISM	4	0	5	0	10	0	0					
C 180 C3-10 DO YOU USE OR REFER TO MAGNETIC INDUCTION	29	23	31	33	35	67	13					
C 181 C3-11 DO YOU USE OR REFER TO FLUX DENSITY RULE THAT FOR	28	19	31	33	35	67	8					
C 182 C3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT FOR	59	62	58	67	68	100	38					
MAGNETIC POLES, LIKE POLES REPEL AND UNLIKE POLES ATTRACT												
C 183 C3-13 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE	21	23	20	33	26	67	8					
DIRECTION OF MAGNETIC FIELDS ABOUT STRAIGHT WIRES												
C 184 C3-14 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE NORTH	19	15	20	33	26	33	8					
POLE OF A CURRENT CARRYING COIL												
D 185 D1-01 DO YOU WORK WITH RC, LR, RCL CIRCUITS IN YOUR	49	15	56	0	52	0	58					
PRESENT JOB												
D 186 D1-02 DO YOU USE OR REFER TO VECTORS WHEN WORKING WITH RCL	13	0	16	0	23	0	4					
CIRCUITS												
D 187 D1-03 DO YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN	10	0	13	0	16	0	4					
WORKING WITH RCL CIRCUITS												
D 188 D1-04 DO YOU USE OR REFER TO SINE WHEN WORKING WITH RCL	9	0	11	0	16	0	4					
CIRCUITS												
D 189 D1-05 DO YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL	9	0	11	0	16	0	4					
CIRCUITS												
D 190 D1-06 DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL	10	0	13	0	16	0	4					
CIRCUITS												
D 191 D1-07 DO YOU USE OR REFER TO WATTS WHEN WORKING WITH RCL	26	15	29	0	29	0	25					
CIRCUITS												
D 192 D1-08 DO YOU USE OR REFER TO TRUE POWER (PT) WHEN WORKING	21	8	24	0	29	0	8					
WITH RCL CIRCUITS												
D 193 D1-09 DO YOU USE OR REFER TO MAXIMUM POWER (PM) WHEN	18	0	22	0	26	0	4					
WORKING WITH RCL CIRCUITS												
D 194 D1-10 DO YOU USE OR REFER TO AVERAGE POWER (PAVE) WHEN	16	0	20	0	26	0	0					
WORKING WITH RCL CIRCUITS												
D 195 D1-11 DO YOU USE OR REFER TO APPARENT POWER (PA) WHEN	15	8	16	0	23	0	4					
WORKING WITH RCL CIRCUITS												
D 196 D1-12 DO YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING	10	0	13	0	13	0	4					
WITH RCL CIRCUITS												
D 197 D1-13 DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN	21	0	25	0	26	0	21					
WORKING WITH RCL CIRCUITS												
D 198 D1-14 DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH	16	8	18	0	26	0	13					
RCL CIRCUITS												
D 199 D1-15 DO YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH	15	0	18	0	23	0	8					
RCL CIRCUITS												
D 200 D1-16 DO YOU USE OR REFER TO RESONANT FREQUENCY WHEN	22	8	25	0	35	0	13					
WORKING WITH RCL CIRCUITS												
D 201 D1-17 DO YOU USE OR REFER TO HALF POWER POINTS WHEN	3	0	4	0	6	0	0					
WORKING WITH RCL CIRCUITS												
D 202 D1-18 DO YOU USE OR REFER TO BANDPASS REGION WHEN WORKING	10	8	11	0	23	0	0					
WITH RCL CIRCUITS												
D 203 D1-19 DO YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH	6	0	7	0	13	0	0					
RCL CIRCUITS												

RCL CIRCUITS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC 026	SPC 027	SPC 028	SPC 029	SPC 030	SPC 031	SPC 032
D 204 D1-20 DO YOU USE OR REFER TO TANK CIRCUITS WHEN WORKING WITH RCL CIRCUITS	25	15	27	0	39	0	13
D 205 D1-21 DO YOU DETERMINE VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS	6	8	5	0	10	0	4
D 206 D1-22 DO YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS	6	0	7	0	10	0	0
D 207 D1-23 DO YOU CALCULATE TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS	16	8	18	0	23	0	4
D 208 D1-24 DO YOU CALCULATE PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS	6	0	7	0	10	0	0
D 209 D1-25 DO YOU CALCULATE TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS	16	8	18	0	23	0	4
D 210 D1-26 DO YOU CALCULATE IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS	10	8	11	0	16	0	0
D 211 D1-27 DO YOU CALCULATE APPARENT POWER (PA) FOR SERIES RCL CIRCUITS	12	8	13	0	23	0	0
D 212 D1-28 DO YOU CALCULATE TRUE POWER (PT) FOR SERIES RCL CIRCUITS	12	8	13	0	19	0	0
D 213 D1-29 DO YOU CALCULATE POWER FACTORS (PF) FOR SERIES RCL CIRCUITS	9	0	11	0	16	0	0
D 214 D1-30 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RCL CIRCUITS	19	8	22	0	26	0	8
D 215 D1-31 DO YOU CALCULATE IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS	9	0	11	0	16	0	0
D 216 D1-32 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING THE ASSUMED VOLTAGE METHOD	10	8	11	0	16	0	0
D 217 D1-33 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING OHM'S LAW	22	8	25	0	32	0	8
D 218 D1-34 DO YOU CHECK CAPACITORS USING OHMMETERS	50	23	54	0	58	0	50
D 219 D1-35 DO YOU CHECK CAPACITORS USING SUBSTITUTION	37	8	44	0	35	0	42
D 220 D1-36 DO YOU CHECK INDUCTORS USING OHMMETERS	47	15	55	0	52	0	50
D 221 D1-37 DO YOU CHECK INDUCTORS USING SUBSTITUTION	31	8	36	0	35	0	29
D 222 D1-38 DO YOU USE OR REFER TO THE GENERAL RULE THAT $\theta = 0$, $PF = 1$, AND $PA = PT$ FOR RESONANT CIRCUITS	6	0	7	0	10	0	0
D 223 D1-39 DO YOU CALCULATE RESONANT FREQUENCIES FOR RCL CIRCUITS	12	0	15	0	16	0	4
D 224 D1-40 DO YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE RESONANT FREQUENCY FOR SERIES RCL CIRCUITS	18	0	22	0	26	0	8
D 225 D1-41 DO YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT RESONANT FREQUENCY FOR PARALLEL RCL CIRCUITS	15	0	18	0	23	0	4
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 BANDWIDTH IS INVERSELY PROPORTIONAL TO Q	10	8	11	0	13	33	4
D 227 D1-43 DO YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO Q	9	0	11	0	16	0	4
D 228 D1-44 DO YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE, CAPACITANCE, OR INDUCTANCE WILL AFFECT CURRENT OR PHASE ANGLES FOR RCL CIRCUITS	13	8	15	0	16	0	4

DY-TSK

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

SPC SPC SPC SPC SPC SPC SPC SPC
026 027 028 029 030 031 032

SERIES AND PARALLEL RESONANCE
(TIME CONSTANTS)

- D 229 02-01 IN YOUR PRESENT JOB, DO YOU WORK WITH, USE, OR REFER TO SERIES OR PARALLEL RESONANT CIRCUITS OR TIME CONSTANTS
- D 230 02-02 DO YOU WORK WITH, USE, OR REFER TO TIME CONSTANTS
- D 231 02-03 DO YOU WORK WITH, USE, OR REFER TO AVAILABLE VOLTAGE
- D 232 03-04 DO YOU WORK WITH, USE, OR REFER TO TRANSIENT INTERVALS
- D 233 02-08 DO YOU USE OR REFER TO THE GENERAL RULE THAT A CAPACITOR IS FULLY CHARGED (OR DISCHARGED) AFTER FIVE (5) TIME CONSTANTS (TC)
- D 234 02-04 DO YOU USE OR REFER TO UNIVERSAL TIME CONSTANT CHARTS
- D 235 02-07 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CIRCUIT CURRENT OR COMPONENT VOLTAGES AFTER A SPECIFIC TIME FOR RC OR LR CIRCUITS
- D 236 02-08 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE THE TIME REQUIRED FOR CIRCUIT CURRENT OR COMPONENT VOLTAGES TO REACH SPECIFIC VALUES FOR RC OR LR CIRCUITS
- D 237 02-09 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE COMPONENT VALUES REQUIRED FOR CIRCUIT CURRENT AND COMPONENT VOLTAGES TO REACH SPECIFIC VALUES IN SPECIFIC TIMES
- D 238 02-10 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT IN LR CIRCUITS REACHES ITS MINIMUM VALUE (OR ZERO) AFTER FIVE (5) TIME CONSTANTS
- D 239 03-01 DO YOU WORK WITH CIRCUITS USED AS FILTERS IN YOUR PRESENT JOB
- D 240 03-02 DO YOU INSPECT FILTER CIRCUITS
- D 241 03-03 DO YOU CLEAN FILTER CIRCUITS
- D 242 03-04 DO YOU ALIGN OR ADJUST FILTER CIRCUITS
- D 243 03-05 DO YOU TROUBLESHOOT TO THE FILTER CIRCUIT LEVEL
- D 244 03-06 DO YOU TROUBLESHOOT TO COMPONENT PARTS
- D 245 03-07 DO YOU REMOVE OR REPLACE THE COMPLETE FILTER CIRCUIT
- D 246 03-08 DO YOU REMOVE OR REPLACE FILTER CIRCUIT COMPONENT PARTS
- D 247 03-09 DO YOU WORK WITH LOW PASS FILTERS
- D 248 03-10 DO YOU WORK WITH HIGH PASS FILTERS
- D 249 03-11 DO YOU WORK WITH BANDPASS FILTERS
- D 250 03-12 DO YOU WORK WITH BAND-REJECT FILTERS
- D 251 03-13 DON'T REMEMBER WHICH TYPE OF FILTER YOU WORK WITH
- D 252 03-14 DO YOU WORK WITH L-SECTION FILTER CONFIGURATION
- D 253 03-15 DO YOU WORK WITH T-SECTION FILTER CONFIGURATION
- D 254 03-16 DO YOU WORK WITH PI-SECTION FILTER CONFIGURATION
- D 255 03-17 DON'T REMEMBER WHICH TYPE FILTER CONFIGURATION
- D 256 03-18 DO THE FILTERS YOU WORK WITH USE PARALLEL RESONANT CIRCUITS
- D 257 03-19 DO THE FILTERS YOU WORK WITH USE SERIES-PARALLEL CIRCUITS
- D 258 03-20 DO THE FILTERS YOU WORK WITH USE SERIES RESONANT CIRCUITS

37 15 42 0 32 33 46
32 15 36 0 32 0 30
26 15 29 0 32 0 21
22 15 24 0 32 0 13
25 8 29 0 29 0 25
28 8 33 0 29 0 29
29 15 33 0 29 33 29
28 8 33 0 29 0 29
34 8 40 0 32 33 42
32 8 38 0 32 33 38
28 8 33 0 32 33 29
16 8 18 0 19 33 13
9 8 9 0 10 0 4
13 0 16 0 19 0 13
10 0 13 0 16 0 8
10 0 13 0 14 0 8
18 15 18 0 13 33 25
15 8 16 0 23 0 13
19 8 22 0 29 0 13
15 8 16 0 23 0 13

FILTERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

SPC SPC SPC SPC SPC SPC SPC SPC
026 027 028 029 030 031 032

0 259 03-21 DON'T REMEMBER WHICH TYPE OF BASIC CIRCUIT 19 8 22 0 16 33 25
0 260 03-22 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CAPACITANCE OR INDUCTANCE VALUES REQUIRED FOR SPECIFIC FILTERS 9 0 11 0 13 0 8

E 261 E1-01 DO YOU WORK WITH COUPLING DEVICES IN YOUR PRESENT JOB 28 31 27 33 32 67 25
E 262 E1-02 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH RC COUPLING 26 23 27 33 29 67 25

COUPLING

E 263 E1-03 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH IMPEDANCE COUPLING 26 23 27 33 32 67 25
E 264 E1-04 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH TRANSFORMER COUPLING 25 31 24 33 26 67 25

E 265 E1-05 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM RC COUPLING 25 15 27 33 29 33 25
E 266 E1-06 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM IMPEDANCE COUPLING 24 15 25 33 29 0 25

E 267 E1-07 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM TRANSFORMER COUPLING 24 23 24 33 26 67 21
E 268 E1-08 DO YOU WORK WITH DIRECTLY COUPLED CIRCUITS 25 31 24 33 26 67 25
E 269 E1-09 DO YOU WORK WITH CAPACITIVE-RESISTIVE COUPLED CIRCUITS 19 31 16 33 23 67 13

E 270 E1-10 DO YOU WORK WITH CAPACITIVE-INDUCTIVE COUPLED CIRCUITS 18 23 16 33 23 33 13

E 271 E1-11 DO YOU WORK WITH TRANSFORMER COUPLED CIRCUITS 21 31 18 33 19 67 21
E 272 E1-12 DON'T REMEMBER WHICH TYPE OF COUPLING CIRCUITS 16 23 15 33 19 67 8
E 273 E2-01 IN YOUR PRESENT JOB, DO YOU PERFORM SOLDERING TECHNIQUES OR INSPECT OR EVALUATE SOLDERED CONNECTIONS

E 274 E2-02 DO YOU SELECT TYPE OF SOLDER TO USE 88 69 93 33 90 67 96
E 275 E2-03 DO YOU ADD FLUX TO CONNECTIONS 82 77 84 33 87 100 79
E 276 E2-04 DO YOU CLEAN CONNECTIONS USING SOLVENTS 84 69 87 33 94 100 75
E 277 E2-05 DO YOU STRIP INSULATION FROM WIRES 94 85 96 33 100 100 96
E 278 E2-06 DO YOU CONNECT OR DISCONNECT HEAT SINKS 88 77 91 33 94 100 88
E 279 E2-07 DO YOU BEND OR SHAPE WIRES OR LEADS 94 85 96 33 100 100 96
E 280 E2-08 DO YOU CUT WIRES 94 85 96 33 100 100 96
E 281 E2-09 DO YOU FILE OR SHAPE SOLDERING IRON TIPS 88 69 93 33 90 100 92
E 282 E2-10 DO YOU TIN SOLDERING IRON TIPS 93 77 96 33 97 100 96
E 283 E2-11 DO YOU CLEAN SOLDERING IRON TIPS 94 85 96 33 100 100 96
E 284 E2-12 DO YOU CLEAN ELECTRICAL SURFACES USING ERASERS 87 54 95 33 90 100 92
E 285 E2-13 DO YOU TIN OR PRE-TIN CONDUCTORS 85 54 93 33 87 100 92
E 286 E2-14 DO YOU INSPECT SOLDERED CONNECTIONS 93 85 95 33 100 100 92
E 287 E2-15 DO YOU DESOLDER CONNECTIONS BY PICKING 66 54 69 33 74 100 54
E 288 E2-16 DO YOU DESOLDER CONNECTIONS USING VACUUM DESOLDERING TOOLS 91 77 95 33 97 100 92

SOLDERING

E 289 E2-17 DO YOU CUT COMPONENT LEADS TO REMOVE COMPONENTS 63 46 67 33 68 67 63
E 290 E2-18 DO YOU CRUSH COMPONENTS FOR REMOVAL 25 15 27 0 29 0 29

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

Task ID	Description	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
		026	027	028	029	030	031	032	033	034	035	036	037
F 327	F2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH SPEAKERS	21	15	22	0	14	33	29					
F 328	F2-02 DO YOU INSPECT SPEAKERS	16	8	18	0	6	33	29					
F 329	F2-03 DO YOU CLEAN SPEAKERS	12	8	13	0	6	33	21					
F 330	F2-04 DO YOU OPERATE SPEAKERS	13	8	15	0	6	33	21					
F 331	F2-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT PARTS OF SPEAKERS	15	15	16	0	10	33	25					
F 332	F2-06 DO YOU TROUBLESHOOT DOWN TO SPEAKER PARTS	6	0	7	0	3	0	8					
F 333	F2-07 DO YOU REMOVE OR REPLACE COMPLETE SPEAKERS	18	15	18	0	10	33	29					
F 334	F2-08 DO YOU REMOVE OR REPLACE SPEAKER PARTS	4	0	5	0	3	0	8					
F 335	F2-09 DO YOU PERFORM ANY TASKS ON SPEAKER CONES	0	0	0	0	0	0	0					
F 336	F2-10 DO YOU PERFORM ANY TASKS ON SPEAKER SPIDERS	0	0	0	0	0	0	0					
F 337	F2-11 DO YOU PERFORM ANY TASKS ON SPEAKER FIELD COILS	0	0	0	0	0	0	0					
F 338	F2-12 DO YOU PERFORM ANY TASKS ON SPEAKER VOICE COILS	0	0	0	0	0	0	0					
F 339	F2-13 DO YOU PERFORM ANY TASKS ON SPEAKER PERMANENT MAGNETS	1	8	0	0	3	0	0					
F 340	F2-14 DO YOU PERFORM ANY TASKS ON SPEAKER ELECTROMAGNETS	1	0	2	0	3	0	0					
F 341	F2-15 DO YOU PERFORM ANY TASKS ON SPEAKER SOFT IRON CORES	0	0	0	0	0	0	0					
F 342	F3-01 DO YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB	90	92	89	100	90	67	96					
F 343	F3-02 DO YOU USE OSCILLOSCOPES TO PERFORM OPERATIONAL CHECKS	90	92	89	67	97	67	88					
F 344	F3-03 DO YOU USE OSCILLOSCOPES TO PERFORM ALIGNMENTS OR ADJUSTMENTS	85	77	87	33	97	100	79					
F 345	F3-04 DO YOU USE OSCILLOSCOPES TO TROUBLESHOOT ELECTRONIC CIRCUITS	94	92	95	100	97	100	96					
F 346	F3-05 DO YOU USE OSCILLOSCOPES TO MEASURE FREQUENCY	84	92	82	67	100	100	63					
F 347	F3-06 DO YOU USE OSCILLOSCOPES TO MEASURE TIME	87	92	85	67	100	100	71					
F 348	F3-07 DO YOU USE OSCILLOSCOPES TO OBSERVE LISAJOUS PATTERNS	38	23	42	33	55	33	17					
F 349	F3-08 DO YOU USE OSCILLOSCOPES TO OBSERVE SIGNALS WHILE UTILIZING ATTENUATOR PROBES	85	85	85	100	90	100	74					
F 350	F3-09 DO YOU USE OSCILLOSCOPES TO MAKE FREQUENCY OR TIME MEASUREMENTS USING DELAY TIME MULTIPLIERS	59	54	60	67	77	67	29					
F 351	F3-10 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE	72	62	75	100	66	67	75					
F 352	F3-11 DO YOU USE OSCILLOSCOPES TO MEASURE OR OBSERVE SIGNALS AFTER FIRST ADJUSTING THE GAIN AND DC BAL CONTROLS	51	46	53	33	61	33	46					
F 353	F3-12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE	71	85	93	100	97	67	88					
G 354	G1-01 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT JOB	88	85	89	67	90	100	88					
G 355	G1-02 DO YOU INSPECT DIODES	90	85	91	67	94	100	88					
G 356	G1-03 DO YOU REMOVE OR REPLACE DIODES	88	77	91	67	90	100	88					
G 357	G1-04 DO YOU CHECK DIODES USING AN INSTRUMENT	88	77	91	67	94	100	88					
G 358	G1-05 DO YOU USE ENERGY LEVEL DIAGRAMS IN YOUR WORK WITH DIODES	4	0	5	0	10	0	0					
G 359	G1-06 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES, TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE, TO COMPUTE FORWARD OR REVERSE LIAS RESISTANCE	16	0	20	0	29	0	4					
G 360	G1-07 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR DIODES	21	8	24	0	32	33	8					

SPEAKERS

OSCILLOSCOPES

SEMICONDUCTOR DIODES

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	026	027	028	029	030	031	032				
6 361 61-08 DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES	69	62	71	67	74	67	58				
6 362 61-09 DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO OTHER ELECTRONIC COMPONENTS, SUCH AS RESISTORS, BASED ON THEIR PHYSICAL APPEARANCE	81	69	84	67	84	100	75				
6 363 61-10 DO YOU REFER TO OR DO YOU DETERMINE THE GENERAL EFFECTS OF DOPING ON CURRENT FLOW	13	8	15	0	19	0	0				
6 364 61-11 DO YOU USE OR REFER TO MEASUREMENTS OF FORWARD BIAS RESISTANCE	56	15	65	0	55	67	58				
6 365 61-12 DO YOU USE OR REFER TO DIODE COLOR CODING	26	8	31	0	32	0	21				
6 366 61-13 DO YOU USE OR REFER TO CENTRIFUGAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS	1	0	2	0	3	0	0				
6 367 61-14 DO YOU USE OR REFER TO CENTRIPETAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS	1	0	2	0	3	0	0				
6 368 61-15 DO YOU USE OR REFER TO DIODE NUMBERING SYSTEM, SUCH AS IN S38	66	38	73	33	61	67	71				
6 369 61-16 DO YOU USE OR REFER TO KINETIC ENERGY OF AN ELECTRON MOVING IN ORBIT	1	0	2	0	3	0	0				
6 370 61-17 DO YOU USE OR REFER TO POTENTIAL ENERGY OF AN ELECTRON MOVING IN ORBIT	1	0	2	0	3	0	0				
6 371 61-18 DO YOU USE OR REFER TO MEASUREMENTS OF REVERSE BIAS RESISTANCE	60	15	71	0	58	67	71				
6 372 61-19 DO YOU USE OR REFER TO NUMBER OF ELECTRONS IN A PARTICULAR SHELL OR ORBIT	3	0	4	0	6	0	0				
6 373 61-20 DO YOU USE OR REFER TO PERMISSIBLE ENERGY LEVELS OF AN ORBITING ELECTRON	1	0	2	0	3	0	0				
6 374 61-21 DO YOU USE OR REFER TO FORBIDDEN ENERGY LEVELS OF AN ORBITING ELECTRON	1	0	2	0	3	0	0				
6 375 61-22 DO YOU USE OR REFER TO VALENCE ELECTRONS (THOSE IN THE OUTERMOST SHELL)	4	0	5	0	6	0	4				
6 376 61-23 DO YOU USE OR REFER TO ATOMIC NUMBER (TOTAL NUMBER OF ELECTRONS IN ATOM)	4	0	5	0	6	0	4				
6 377 61-24 DO YOU USE OR REFER TO SYMBOLS ON THE DIODE WHICH INDICATE THE CATHODE END	61	77	82	67	84	100	79				
6 378 61-25 DO YOU NEED TO KNOW WHICH MATERIALS ARE USED IN THE CONSTRUCTION OF DIODES SUCH AS GERMANIUM OR SILICON	24	8	27	33	16	0	29				
6 379 61-26 DO YOU NEED TO KNOW THAT SEMICONDUCTORS HAVE NEGATIVE TEMPERATURE COEFFICIENTS OF RESISTANCE (AS TEMPERATURE INCREASES RESISTANCE DECREASES)	37	23	40	0	32	0	38				
6 380 61-27 DO YOU USE OR REFER TO PN JUNCTION DIODE CHARACTERISTIC CURVES, SUCH AS VOLTAGE - CURRENT POINTS OF STRUCTURAL BREAKDOWN OR OPERATING REGIONS)	13	0	16	0	19	0	4				
6 381 61-28 DO YOU DETERMINE WHETHER PN JUNCTION DIODES ARE FORWARD BIASED OR REVERSE BIASED WHEN YOU READ OR INTERPRET CIRCUIT DIAGRAMS	49	23	55	0	55	0	50				
6 382 61-29 DO YOU USE OR REFER TO VALENCE BAND IN SEMICONDUCTOR MATERIALS	9	8	9	0	16	0	0				

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task Description	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	026	027	028	029	030	031	032				
6 383 61-30 DO YOU USE OR REFER TO FORBIDDEN BAND IN SEMICONDUCTOR MATERIALS	7	0	9	0	13	0	0				
6 384 61-31 DO YOU USE OR REFER TO CONDUCTION BAND IN SEMICONDUCTOR MATERIALS	9	0	11	0	13	0	0				
6 385 61-32 DO YOU USE OR REFER TO COVALENT BONDING IN SEMICONDUCTOR MATERIALS	7	0	9	0	13	0	4				
6 386 61-33 DO YOU USE OR REFER TO ELECTRON-MOLE PAIR CREATED IN SEMICONDUCTORS	9	0	11	0	16	0	4				
6 387 61-34 DO YOU USE OR REFER TO ELECTRON FLOW OR HOLE FLOW IN SEMICONDUCTORS	16	0	20	0	23	0	4				
6 388 61-35 DO YOU USE OR REFER TO DONOR IMPURITY IN SEMICONDUCTORS	7	0	9	0	13	0	4				
6 389 61-36 DO YOU USE OR REFER TO ACCEPTOR IMPURITY IN SEMICONDUCTORS	7	0	9	0	13	0	4				
6 390 61-37 DO YOU USE OR REFER TO P-TYPE SEMICONDUCTOR MATERIAL	22	0	27	0	32	0	13				
6 391 61-38 DO YOU USE OR REFER TO N-TYPE SEMICONDUCTOR MATERIAL	24	0	29	0	32	0	13				
6 392 61-39 DO YOU USE OR REFER TO MAJORITY CARRIERS IN SEMICONDUCTORS	12	0	15	0	19	0	4				
6 393 61-40 DO YOU USE OR REFER TO MINORITY CARRIERS IN SEMICONDUCTORS	10	0	13	0	19	0	4				
6 394 61-41 DO YOU USE OR REFER TO JUNCTION RECOMBINATION IN SEMICONDUCTORS	7	0	9	0	13	0	4				
6 395 61-42 DO YOU USE OR REFER TO DEPLETION REGION IN SEMICONDUCTORS	9	0	11	0	16	0	4				
6 396 61-43 DO YOU USE OR REFER TO RELATIONSHIP BETWEEN BARRIER WIDTH AND DIFFERENCE OF POTENTIAL	9	0	11	0	16	0	4				
6 397 61-44 DO YOU USE OR REFER TO THE 10:1 BACK TO FRONT RESISTANCE RATIO FOR DIODES	32	15	36	0	29	33	46				
6 398 61-45 DO YOU USE OR REFER TO BARRIER HEIGHT IN SEMICONDUCTORS	3	0	4	0	6	0	0				
6 399 61-46 DO YOU USE OR REFER TO DIODE SUBSTITUTION INFORMATION	40	15	45	0	48	33	42				
6 400 61-47 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD CURRENT DIODE RATINGS	12	0	15	0	19	0	4				
6 401 61-48 DO YOU USE OR REFER TO PEAK RECURRENT FORWARD CURRENT DIODE RATINGS	12	0	15	0	19	0	4				
6 402 61-49 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT DIODE RATINGS	13	0	16	0	19	0	8				
6 403 61-50 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE DIODE RATINGS	13	0	16	0	19	0	8				
6 404 62-01 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB.	93	85	95	100	90	100	96				
6 405 62-02 DO YOU INSPECT TRANSISTORS	91	77	95	67	94	100	92				
6 406 62-03 DO YOU REMOVE OR REPLACE TRANSISTORS	88	69	93	67	90	100	86				
6 407 62-04 DO YOU CHECK TRANSISTORS USING AN INSTRUMENT	91	85	93	100	94	100	88				
6 408 62-05 DO YOU USE OR REFER TO EMITTER - BASE (EB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	82	77	84	67	84	100	79				
6 409 62-06 DO YOU USE OR REFER TO COLLECTOR - BASE (CB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	85	77	87	67	87	100	83				

TRANSISTORS

PCT MBRS RESPONDING *YES* BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC 026	SPC 027	SPC 028	SPC 029	SPC 030	SPC 031	SPC 032
6 437 63-10 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A CHANGE IN BASE CURRENT	13	0	16	0	23	0	4
6 438 63-11 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A SPECIFIC CHANGE IN BASE CURRENT	9	0	11	0	10	0	4
6 439 63-12 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN BASE CURRENT WHICH RESULTS FROM AN INPUT SIGNAL	16	8	18	0	19	0	4
6 440 63-13 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN BASE CURRENT WHICH RESULTS FROM A SPECIFIC INPUT SIGNAL	9	0	11	0	10	0	4
6 441 63-14 DO YOU USE THE LOAD-LINE METHOD OF ANALYSIS IN YOUR CIRCUIT ANALYSIS (THIS METHOD REQUIRES YOU TO PLOT A LOAD-LINE ON A TRANSISTOR CHARACTERISTIC CURVE)	4	0	5	0	10	0	0
6 442 63-15 DO YOU USE OR REFER TO THE OPERATING POINT Q (QUIESCENT POINT) FOR A TRANSISTOR	12	0	15	0	19	0	8
6 443 63-16 DO YOU CALCULATE THE SPECIFIC QUIESCENT POINT FOR A PARTICULAR TRANSISTOR	7	0	9	0	10	0	8
6 444 63-17 DO YOU MEASURE VOLTAGE GAIN USED IN THE COMMON EMITTER CONFIGURATION	28	8	33	0	42	0	13
6 445 63-18 DO YOU MEASURE CURRENT GAIN USED IN THE COMMON EMITTER CONFIGURATION	25	8	29	0	39	0	8
6 446 63-19 DO YOU MEASURE POWER GAIN USED IN THE COMMON EMITTER CONFIGURATION	22	15	24	0	32	33	4
6 447 63-20 DO YOU CALCULATE THE VOLTAGE GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE IN BASE-EMITTER VOLTAGE INTO THE CHANGE THE BASE COLLECTOR VOLTAGE TO DETERMINE THE VOLTAGE GAIN	4	0	5	0	10	0	0
6 448 63-21 DO YOU CALCULATE THE CURRENT GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE IN BASE CURRENT INTO THE CHANGE IN COLLECTOR CURRENT TO DETERMINE THE CURRENT GAIN	6	0	7	0	13	0	0
6 449 63-22 DO YOU CALCULATE THE POWER GAIN FOR A SPECIFIC TRANSISTOR USING A FORMULA THAT IS, DO YOU MULTIPLY THE CURRENT GAIN TIMES THE VOLTAGE GAIN TO DETERMINE THE POWER GAIN	4	0	5	0	10	0	0
6 450 63-23 DO YOU NEED TO KNOW THAT MORE COLLECTOR CURRENT IS GENERATED WITH LESS COLLECTOR VOLTAGE AS TEMPERATURE INCREASES (THIS AFFECTS THE STATIC OPERATING POINT Q) OF THE TRANSISTOR)	4	0	5	0	10	0	0
6 451 63-24 DO YOU COMPUTE THE STATIC OPERATING POINT Q) OF A TRANSISTOR AT DIFFERENT TEMPERATURES	4	0	5	0	6	0	4
6 452 63-25 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH EMITTER (SWAMPING) RESISTOR STABILIZATION	22	8	25	0	32	0	17
6 453 63-26 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH SELF-BIAS STABILIZATION	21	8	24	0	32	0	13

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task ID	Description	SPC 026	SPC 027	SPC 028	SPC 029	SPC 030	SPC 031	SPC 032
6 454	63-27 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH THERMISTOR STABILIZATION	22	8	25	0	32	0	17
6 455	63-28 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH FORWARD BIAS DIODE STABILIZATION	26	8	31	0	39	0	21
6 456	63-29 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH REVERSE BIAS DIODE STABILIZATION	26	8	31	0	39	0	21
6 457	63-30 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH DOUBLE DIODE STABILIZATION	15	8	16	0	23	0	8
6 458	63-31 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM EMITTER (SWAMPING) RESISTOR STABILIZATION	24	8	31	0	32	0	25
6 459	63-32 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM SELF-BIAS STABILIZATION	24	8	27	0	29	0	21
6 460	63-33 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THERMISTOR STABILIZATION	24	8	27	0	29	0	21
6 461	63-34 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM FORWARD BIAS DIODE STABILIZATION	25	8	29	0	29	0	25
6 462	63-35 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM REVERSE BIAS DIODE STABILIZATION	25	8	29	0	29	0	25
6 463	63-36 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM DOUBLE DIODE STABILIZATION	13	8	15	0	19	0	13
6 464	63-37 DO YOU IDENTIFY AMPLITUDE DISTORTION FOR TRANSISTOR CIRCUITS	15	15	15	0	23	0	8
6 465	63-38 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF AMPLITUDE DISTORTION	21	8	24	0	26	0	17
6 466	63-39 DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS	15	15	15	0	19	0	8
6 467	63-40 DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS	13	8	15	0	23	0	8
6 468	63-41 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF PHASE DISTORTION	13	0	16	0	19	0	13
6 469	63-42 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF FREQUENCY DISTORTION	12	8	13	0	19	0	4
6 470	63-43 DO YOU NEED TO KNOW THE DEGENERATIVE EFFECTS ON THE CIRCUIT CAUSED BY CHANGING EMITTER RESISTANCE FOR TRANSISTOR AMPLIFIERS IN THE COMMON COLLECTOR CONFIGURATION	9	0	11	0	19	0	0
6 471	63-44 DO YOU DETERMINE THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS	10	15	9	0	13	33	0
6 472	63-45 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	7	8	7	0	10	0	8
6 473	63-46 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	22	15	24	0	26	33	21
6 474	63-47 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY CIRCUITS	12	8	13	0	16	0	13
6 475	63-48 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	13	8	15	0	19	0	13

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

	SPC 024	SPC 027	SPC 028	SPC 029	SPC 030	SPC 031	SPC 032
6 476 63-49 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	15	8	16	0	23	0	8
M 477 M1-01 DO YOU USE OR REFER TO VARACTORS	22	8	25	33	29	0	13
M 478 M1-02 DO YOU USE OR REFER TO TUNNEL DIODES	26	8	31	33	32	0	25
M 479 M1-03 DO YOU USE OR REFER TO FIELD EFFECT TRANSISTORS (FET)	34	15	38	0	39	33	33
M 480 M1-04 DO YOU USE OR REFER TO UNIJUNCTION TRANSISTORS	21	8	24	0	26	0	21
M 481 M1-05 DO YOU USE OR REFER TO ZENER DIODES	79	77	80	67	84	100	79
M 482 M1-06 DO YOU USE OR REFER TO INTEGRATED CIRCUITS	76	77	76	67	74	100	83
M 483 M2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH POWER SUPPLIES	81	92	78	67	90	67	71
M 484 M2-02 DO YOU INSPECT POWER SUPPLIES	85	92	84	67	100	67	71
M 485 M2-03 DO YOU CLEAN POWER SUPPLIES	85	92	84	67	100	67	71
M 486 M2-04 DO YOU ALIGN OR ADJUST POWER SUPPLIES	84	85	84	33	100	67	71
M 487 M2-05 DO YOU TROUBLESHOOT TO POWER SUPPLY CIRCUIT LEVEL	78	62	92	33	90	67	71
M 488 M2-06 DO YOU TROUBLESHOOT TO POWER SUPPLY COMPONENTS	72	54	76	33	87	67	58
M 489 M2-07 DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES	79	77	80	67	94	67	63
M 490 M2-08 DO YOU REMOVE OR REPLACE POWER SUPPLY COMPONENTS	75	69	76	67	90	67	58
M 491 M2-09 DO YOU WORK WITH HALF-WAVE RECTIFIERS	46	54	44	33	48	67	46
M 492 M2-10 DO YOU WORK WITH FULL-WAVE RECTIFIERS OTHER THAN BRIDGE RECTIFIERS	53	54	53	33	65	33	46
M 493 M2-11 DO YOU WORK WITH BRIDGE RECTIFIERS	57	46	60	0	58	67	63
M 494 M2-12 DO YOU WORK WITH THREE-PHASE RECTIFIERS	49	38	51	67	58	0	38
M 495 M2-13 DO YOU USE OR REFER TO INPUT VOLTAGE	79	85	78	67	94	67	63
M 496 M2-14 DO YOU USE OR REFER TO INPUT FREQUENCY	59	62	58	33	65	33	50
M 497 M2-15 DO YOU USE OR REFER TO PEAK OUTPUT VOLTAGE	60	69	58	33	71	67	42
M 498 M2-16 DO YOU USE OR REFER TO AVERAGE OUTPUT VOLTAGE	59	62	58	67	74	33	38
M 499 M2-17 DO YOU USE OR REFER TO RIPPLE AMPLITUDE	32	31	33	0	42	33	8
M 500 M2-18 DO YOU USE OR REFER TO RIPPLE FREQUENCY	29	23	31	0	39	33	4
M 501 M2-19 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE	25	15	27	0	35	33	4
M 502 M2-20 DO YOU USE OR REFER TO SHAPE OF OUTPUT WAVEFORMS	50	54	49	33	61	33	29
M 503 M2-21 DO YOU USE OR REFER TO EFFECTIVE OUTPUT VOLTAGE	62	69	60	67	74	33	46
M 504 M2-22 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE FILTERS	54	38	58	67	61	33	58
M 505 M2-23 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE FILTERS	43	38	44	67	52	33	42
M 506 M2-24 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE INPUT L-TYPE FILTERS	35	23	38	33	42	33	33
M 507 M2-25 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE INPUT L-TYPE FILTERS	34	23	36	33	39	33	33
M 508 M2-26 DC YOU WORK WITH CIRCUITS WHICH EMPLOY LC PI-TYPE FILTERS	26	15	29	33	26	0	33
M 509 M2-27 DO YOU WORK WITH CIRCUITS WHICH EMPLOY RC PI-TYPE FILTERS	29	15	33	33	26	0	42
M 510 M2-28 DO YOU WORK WITH CIRCUITS WHICH EMPLOY DONT REMEMBER WHICH TYPE OF FILTER	26	31	25	33	35	0	17
M 511 M2-29 DO YOU HAVE THE OPTION OF REPLACING ONE TYPE OF FILTER WITH A DIFFERENT TYPE FILTER	6	8	5	0	10	0	0
M 512 M3-01 DC YOU WORK WITH OSCILLATORS IN YOUR PRESENT JOB	66	54	69	33	77	33	58

OSCILLATORS

SOLID-STATE SPECIAL

PURPOSE DEVICES

POWER SUPPLIES

PCT MBS RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task Description	SPC 026	SPC 027	SPC 028	SPC 029	SPC 030	SPC 031	SPC 032
M 513 M3-02 DO YOU INSPECT OSCILLATORS	59	46	62	33	68	33	54
M 514 M3-03 DO YOU ALIGN OR ADJUST OSCILLATORS	47	38	49	0	65	33	29
M 515 M3-04 DO YOU REMOVE OR REPLACE COMPLETE OSCILLATORS	57	54	58	33	65	33	54
M 516 M3-05 DO YOU REMOVE OR REPLACE OSCILLATOR COMPONENTS	49	46	49	33	61	33	38
M 517 M3-06 DO YOU TROUBLESHOOT TO OSCILLATOR CIRCUIT LEVEL	53	46	55	33	61	33	46
M 518 M3-07 DO YOU TROUBLESHOOT TO OSCILLATOR COMPONENTS	49	46	49	33	61	33	33
M 519 M3-08 DO YOU USE OR REFER TO FEEDBACK	35	31	36	0	48	33	25
M 520 M3-09 DO YOU USE OR REFER TO FREQUENCY DETERMINING DEVICES (FDD)	32	31	33	0	42	33	21
M 521 M3-10 DO YOU USE OR REFER TO AMPLITUDE STABILITY	29	31	29	0	39	33	17
M 522 M3-11 DO YOU USE OR REFER TO FREQUENCY STABILITY	38	38	36	33	48	33	21
M 523 M3-12 DO YOU USE OR REFER TO DAMPING	18	23	16	0	29	33	4
M 524 M3-13 DO YOU USE OR REFER TO REGENERATIVE FEEDBACK	32	31	33	0	45	33	21
M 525 M3-14 DO YOU USE OR REFER TO PIEZOELECTRIC EFFECT	12	15	11	0	19	33	0
M 526 M3-15 DO YOU USE OR REFER TO CRITICAL DAMPING	9	0	11	0	19	0	0
M 527 M3-16 DO YOU USE OR REFER TO UNDER DAMPING	13	15	13	0	29	0	0
M 528 M3-17 DO YOU USE OR REFER TO OVER DAMPING	13	15	13	0	29	0	0
M 529 M3-18 DO YOU WORK WITH OSCILLATORS WHICH USE LC TANK CIRCUITS AS FDD	34	15	38	0	39	33	38
M 530 M3-19 DO YOU WORK WITH OSCILLATORS WHICH USE RC NETWORKS AS FDD	37	23	40	0	45	33	38
M 531 M3-20 DO YOU WORK WITH OSCILLATORS WHICH USE CRYSTALS AS FDD	26	23	27	0	42	0	17
M 532 M3-21 DO YOU WORK WITH OSCILLATORS WHICH USE DON'T REMEMBER WHICH TYPE OF FDD	13	16	13	0	16	0	13
M 533 M3-22 DO YOU WORK WITH SERIES HARTLEY SINUSOIDAL OSCILLATORS	29	15	33	0	35	33	25
M 534 M3-23 DO YOU WORK WITH SHUNT HARTLEY SINUSOIDAL OSCILLATORS	26	8	29	0	32	0	21
M 535 M3-24 DO YOU WORK WITH COLPITTS SINUSOIDAL OSCILLATORS	28	8	33	0	35	33	21
M 536 M3-25 DO YOU WORK WITH CLAPP SINUSOIDAL OSCILLATORS	13	0	16	0	23	0	8
M 537 M3-26 DO YOU WORK WITH BUTLER SINUSOIDAL OSCILLATORS	12	0	15	0	23	0	4
M 538 M3-27 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF OSCILLATORS	31	23	33	0	39	0	25
I 539 I1-01 DO YOU WORK WITH MULTIVIBRATORS IN YOUR PRESENT JOB	63	38	69	33	68	67	58
I 540 I1-02 DO YOU INSPECT WAVE GENERATING OR SHAPING CIRCUITS	56	38	60	33	61	33	54
I 541 I1-03 DO YOU ALIGN OR ADJUST WAVE GENERATING OR SHAPING CIRCUITS	37	31	38	0	55	33	17
I 542 I1-04 DO YOU CALIBRATE WAVE GENERATING OR SHAPING CIRCUITS	32	31	33	0	56	33	8
I 543 I1-05 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUITS	54	38	58	33	61	67	54
I 544 I1-06 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUIT COMPONENTS	44	31	47	0	58	33	33
I 545 I1-07 DO YOU REMOVE OR REPLACE COMPLETE WAVE GENERATING OR SHAPING CIRCUITS	50	31	55	33	58	67	46
I 546 I1-08 DO YOU REMOVE OR REPLACE WAVE GENERATING OR SHAPING COMPONENTS	44	31	47	33	58	67	33
I 547 I1-09 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK CIRCUITS	26	15	29	0	26	33	33

MULTIVIBRATORS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	026	027	028	029	030	031	032					
I 548 11-10 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN RC NETWORKS	32	15	36	0	32	33	42					
I 549 11-11 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN CRYSTALS	15	15	15	0	26	0	4					
I 550 11-12 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN DON'T REMEMBER WHICH TYPE OF FDD	18	15	18	0	29	0	8					
I 551 11-13 DO YOU WORK WITH ASTABLE MULTIVIBRATORS	53	31	58	33	61	67	50					
I 552 11-14 DO YOU WORK WITH MONOSTABLE MULTIVIBRATORS	54	31	60	33	65	67	50					
I 553 11-15 DO YOU WORK WITH BISTABLE MULTIVIBRATORS	59	31	65	33	68	67	54					
I 554 11-16 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE MULTIVIBRATORS	12	23	9	0	16	33	4					
I 555 12-01 DO YOU WORK WITH LIMITERS OR CLAMPERS IN YOUR PRESENT JOB	25	15	27	0	32	33	21					
I 556 12-02 DO YOU WORK WITH SERIES DIODE LIMITERS	19	15	20	0	32	33	8					
I 557 12-03 DO YOU WORK WITH SHUNT DIODE LIMITERS	12	8	13	0	23	0	4					
I 558 12-04 DO YOU WORK WITH LIMITERS WITH BIAS	12	8	13	0	26	0	0					
I 559 12-05 DO YOU WORK WITH ZENER DIODE LIMITERS	24	15	25	0	32	33	17					
I 560 12-06 DO YOU WORK WITH TRANSISTOR LIMITERS	19	15	20	0	32	33	8					
I 561 12-07 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF LIMITERS	10	8	11	0	13	0	13					
I 562 12-08 DO YOU WORK WITH BASIC DIODE CLAMPING CIRCUITS	18	15	18	0	32	33	4					
I 563 12-09 DO YOU WORK WITH DIODE CLAMPING CIRCUITS WITH BIAS	13	8	15	0	29	0	0					
I 564 12-10 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF CLAMPING CIRCUIT	12	8	13	0	13	0	17					
I 565 13-01 IN YOUR PRESENT JOB, DO YOU WORK ON EQUIPMENT WHICH CONTAINS ELECTRON TUBES	22	8	25	33	35	0	0					
I 566 13-02 DO YOU CHECK ELECTRON TUBES TO SEE IF THEY ARE GOOD	21	8	24	33	35	0	0					
I 567 13-03 DO YOU USE TUBE TESTERS TO CHECK ELECTRON TUBES	10	0	13	0	19	0	0					
I 568 13-04 DO YOU USE MULTIMETERS TO CHECK ELECTRON TUBES	19	8	22	33	32	0	0					
I 569 13-05 DO YOU USE SCOPES TO CHECK ELECTRON TUBES	13	0	16	0	23	0	0					
I 570 13-06 DO YOU USE SUBSTITUTION TO CHECK ELECTRON TUBES	22	8	25	33	35	0	0					
I 571 13-07 DO YOU USE OR REFER TO CUTOFF	13	8	15	33	23	0	0					
I 572 13-08 DO YOU USE OR REFER TO PEAK INVERSE VOLTAGE RATING	9	0	11	0	19	0	0					
I 573 13-09 DO YOU USE OR REFER TO PEAK CURRENT RATING	9	0	11	0	19	0	0					
I 574 13-10 DO YOU USE OR REFER TO TRANSIT TIME	6	0	7	0	13	0	0					
I 575 13-11 DO YOU USE OR REFER TO PLATE DISSIPATION RATING	9	8	9	33	16	0	0					
I 576 13-12 DO YOU USE OR REFER TO SATURATION	15	8	16	33	23	0	0					
I 577 13-13 DO YOU USE OR REFER TO DC PLATE RESISTANCE	9	0	11	0	16	0	0					
I 578 13-14 DO YOU COMPUTE ACTUAL VALUES OF THE DC PLATE RESISTANCE FOR ELECTRON TUBES	6	0	7	0	13	0	0					
I 579 13-15 DO YOU USE OR REFER TO PLATE VOLTAGE	21	8	24	33	35	0	0					
I 580 13-16 DO YOU USE OR REFER TO PLATE CURRENT	19	8	22	33	32	0	0					
I 581 13-17 DO YOU USE OR REFER TO GRID VOLTAGE	21	8	24	33	35	0	0					
I 582 13-18 DO YOU USE OR REFER TO GRID CURRENT	19	8	22	33	32	0	0					
I 583 13-19 DO YOU USE OR REFER TO CATHODE VOLTAGE	19	8	22	33	35	0	0					
I 584 13-20 DO YOU USE OR REFER TO CATHODE CURRENT	18	8	20	33	32	0	0					
I 585 13-21 DO YOU USE OR REFER TO THE TRIODE AMPLIFICATION FACTOR (THE AMPLIFICATION FACTOR FOR TRIODES IS DEFINED AS THE RATIO OF CHANGE IN PLATE VOLTAGE TO A CHANGE IN GRID VOLTAGE)	3	0	4	0	6	0	0					

LIMITERS AND CLAMPERS

ELECTRON TUBES

PCT MBS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC SPC SPC SPC SPC SPC
026 027 028 029 030 031 032

DY-TSK

I 584	13-22	DO YOU CALCULATE ACTUAL VALUES OF TRIODE AMPLIFICATION FACTORS	1	0	2	0	3	0	0
I 587	13-23	DO YOU USE OR REFER TO MULTIGRID (TETRODE, PENTODE, ETC) AMPLIFICATION FACTORS	1	0	2	0	3	0	0
I 588	13-24	DO YOU USE OR REFER TO ELECTRON TUBE TRANSCONDUCTANCE (G _m WHICH IS MEASURED IN MHOS)	1	0	2	0	3	0	0
I 589	13-25	DO YOU CALCULATE ACTUAL VALUES OF ELECTRON TUBE TRANSCONDUCTANCES	1	0	2	0	3	0	0
I 590	13-26	DO YOU USE OR REFER TO THE ELECTRON TUBE PARAMETER CALLED AC PLATE RESISTANCE	3	0	4	0	6	0	0
I 591	13-27	DO YOU CALCULATE ACTUAL VALUES OF AC PLATE RESISTANCE	3	0	4	0	6	0	0
I 592	13-28	DO YOU USE OR REFER TO ELECTRON TUBE INTERELECTRODE CAPACITANCE	1	0	2	0	3	0	0
I 593	13-29	DO YOU USE OR REFER TO CHARACTERISTIC CURVES IN YOUR WORK WITH ELECTRON TUBES	4	0	5	0	10	0	0
I 594	13-30	DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE VOLTAGE FOR A SPECIFIED BIAS	7	0	9	0	16	0	0
I 595	13-31	DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE CURRENT FOR A SPECIFIED BIAS	7	0	9	0	16	0	0
I 596	13-32	DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR CUTOFF	7	0	9	0	16	0	0
I 597	13-33	DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR SATURATION	7	0	9	0	16	0	0
I 598	13-34	DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER GAIN	9	0	11	0	19	0	0
I 599	13-35	DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER EFFICIENCY	7	0	9	0	16	0	0
I 600	13-36	DO YOU USE TEST TUBE CHECKERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	10	0	13	0	19	0	0
I 601	13-37	DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	9	0	11	0	13	0	0
I 602	13-38	DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	9	0	11	0	13	0	0
I 603	13-39	DO YOU USE CHARACTERISTIC CURVES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	6	0	7	0	13	0	0
I 604	13-40	DO YOU CALCULATE ANY ELECTRON TUBE CAPACITANCES SUCH AS INPUT CAPACITANCE	1	0	2	0	3	0	0
I 605	13-41	DO YOU USE OR REFER TO TUBE SOCKET NOTATION	18	0	22	0	32	0	0
I 606	13-42	DO YOU USE OR REFER TO PIN NUMBERING SYSTEMS	19	0	24	0	35	0	0
I 607	13-43	DO YOU USE OR REFER TO THE TYPE OF MATERIAL OR THE OPERATING TEMPERATURE OF THE EMITTING SURFACE IN THE ELECTRON TUBES YOU WORK ON	3	0	4	0	6	0	0
I 608	13-44	DO YOU USE OR REFER TO TUBE SUBSTITUTION MATERIAL SUCH AS MANUALS OR CHARTS	13	6	15	33	23	0	0
J 609	J1-01	DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS IN YOUR PRESENT JOB	7	0	9	0	6	0	6
J 610	J1-02	DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS	4	0	5	0	6	0	0

ELECTRON TUBE AMPLIFIERS AND CIRCUITS

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

GPSUMZ PAGE 23

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK	SPC		SPC		SPC		SPC		SPC		SPC	
	026	027	028	029	030	031	032	033	034	035	036	
J 611 J1-03 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	1	0	2	0	3	0	0	0	0	0	0	
J 612 J1-04 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	1	0	2	0	3	0	0	0	0	0		
J 613 J1-05 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	1	0	2	0	3	0	0	0	0	0		
J 614 J1-06 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	1	0	2	0	3	0	0	0	0	0		
J 615 J1-07 DO YOU TROUBLESHOOT OR REPAIR DON'T KNOW WHICH TYPE OF AMPLIFIER	7	0	9	0	6	0	0	0	0	0		
J 616 J2-01 DO YOU WORK WITH GAS TUBES (HOT CATHODE OR COLD CATHODE)	6	0	7	0	10	0	0	0	0	0		
J 617 J2-02 DO YOU WORK WITH CATHODE-RAY TUBES	10	0	13	0	13	0	0	0	0	0		
J 618 J2-03 DO YOU USE OR REFER TO THE CHARACTERISTICS OF BEAM POWER TUBES	0	0	0	0	0	0	0	0	0	0		
J 619 J2-04 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH BEAM POWER TUBES ARE USED	0	0	0	0	0	0	0	0	0	0		
J 620 J2-05 DO YOU USE OR REFER TO THE CHARACTERISTICS OF THYRATRONS	0	0	0	0	0	0	0	0	0	0		
J 621 J2-06 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH THYRATRONS ARE USED	0	0	0	0	0	0	0	0	0	0		
J 622 J2-07 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTRON GUNS OF CATHODE-RAY TUBES (CRT)	9	0	11	0	16	0	0	0	0	0		
J 623 J2-08 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROMAGNETIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)	7	0	9	0	16	0	0	0	0	0		
J 624 J2-09 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)	7	0	9	0	16	0	0	0	0	0		
J 625 J2-10 DO YOU USE OR REFER TO PHOSPHOR SCREENS	13	0	16	0	23	33	0	0	0	0		
J 626 J2-11 DO YOU USE OR REFER TO AQUADAG COATINGS	3	0	4	0	6	0	0	0	0	0		
J 627 J2-12 DO YOU USE OR REFER TO ELECTRON OPTICS	3	0	4	0	6	0	0	0	0	0		
J 628 J2-13 DO YOU USE OR REFER TO PERSISTENCE	3	0	4	0	6	0	0	0	0	0		
J 629 J2-14 DO YOU USE OR REFER TO DECAY TIMES	3	0	4	0	6	0	0	0	0	0		
J 630 J2-15 DO YOU USE OR REFER TO FLORESCENCE	6	0	7	0	13	0	0	0	0	0		
J 631 J2-16 DO YOU USE OR REFER TO PHOSPHORESCENCE	7	0	9	0	13	0	0	0	0	0		
J 632 J3-01 DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	16	15	16	0	19	0	17	0	0	0		
J 633 J3-02 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	10	15	9	0	16	0	4	0	0	0		
J 634 J3-03 DO YOU PERFORM TASKS ON FREQUENCY MIXERS	7	15	5	0	13	0	0	0	0	0		
J 635 J3-04 DO YOU USE OR REFER TO THE HETERODYNING OF SIGNALS IN YOUR WORK WITH TRANSMIT OR RECEIVE SYSTEMS	3	0	4	0	6	0	0	0	0	0		
J 636 J3-05 DO YOU PERFORM TASKS ON REACTANCE MODULATORS	3	0	4	0	6	0	0	0	0	0		
J 637 J3-06 DO YOU PERFORM TASKS ON MODULATED OSCILLATORS	10	15	9	0	16	0	4	0	0	0		
K 638 K1-01 DO YOU WORK ON AM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	1	0	2	0	0	0	0	0	0	0		
K 639 K1-02 DO YOU INSPECT AM TRANSMIT OR RECEIVE SYSTEMS	1	0	2	0	0	0	0	0	0	0		
K 640 K1-03 DO YOU CLEAN AM TRANSMIT OR RECEIVE SYSTEMS	1	0	2	0	0	0	0	0	0	0		
K 641 K1-04 DO YOU ALIGN OR ADJUST AM TRANSMIT OR RECEIVE SYSTEMS	1	0	2	0	0	0	0	0	0	0		

AM SYSTEMS

HETERODYNING, MODULATION, AND DEMODULATION

SPECIAL PURPOSE ELECTRON TUBES

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task ID	Description	SPC 026	SPC 027	SPC 028	SPC 029	SPC 030	SPC 031	SPC 032
K 682	KI-05 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE SYSTEMS	1	0	2	0	0	0	4
K 683	KI-06 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE COMPONENTS	1	0	2	0	0	0	4
K 684	KI-07 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE SYSTEMS	1	0	2	0	0	0	4
K 685	KI-08 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE COMPONENTS	1	0	2	0	0	0	4
K 686	KI-09 DO YOU PERFORM TASKS ON RF OSCILLATORS	0	0	0	0	0	0	0
K 687	KI-10 DO YOU PERFORM TASKS ON RF AMPLIFIERS	0	0	0	0	0	0	0
K 688	KI-11 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	3	0	4	0	0	0	8
K 689	KI-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS	1	0	2	0	0	0	4
K 690	KI-13 DO YOU PERFORM TASKS ON LOCAL OSCILLATORS	3	0	4	0	0	0	8
K 691	KI-14 DO YOU PERFORM TASKS ON IF AMPLIFIERS	1	0	2	0	0	0	4
K 692	KI-15 DO YOU PERFORM TASKS ON DETECTORS	3	0	4	0	0	0	8
K 693	KI-16 DO YOU PERFORM TASKS ON DON'T REMEMBER WHICH AM STAGE TRANSMITTERS	1	0	2	0	3	0	0
K 694	KI-17 DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN TRANSMITTERS	0	0	0	0	0	0	0
K 695	KI-18 DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN TRANSMITTERS	0	0	0	0	0	0	0
K 696	KI-19 DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS	0	0	0	0	0	0	0
K 697	KI-20 DO YOU USE OR REFER TO SELECTIVITY OF RECEIVERS	0	0	0	0	0	0	0
K 698	KI-21 DO YOU USE OR REFER TO 2ND HARMONIC DISTORTION	0	0	0	0	0	0	0
K 699	KI-22 DO YOU USE OR REFER TO BANDPASS DISTORTION	0	0	0	0	0	0	0
K 700	KI-23 DO YOU USE OR REFER TO SQUARE LAW DISTORTION	0	0	0	0	0	0	0
K 701	KI-24 DO YOU USE OR REFER TO CO-CHANNEL INTERFERENCE	0	0	0	0	0	0	0
K 702	KI-25 DO YOU USE OR REFER TO IMAGE FREQUENCIES IN RECEIVERS	0	0	0	0	0	0	0
K 703	KI-26 DO YOU USE OR REFER TO SIGNAL TO IMAGE RATIOS OR IMAGE REJECTION RATIOS	0	0	0	0	0	0	0
K 704	KI-27 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM TRANSMITTER SCHEMATIC DIAGRAMS	1	0	2	0	0	0	4
K 705	KI-28 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM RECEIVER SCHEMATIC DIAGRAMS	1	0	2	0	0	0	4
K 706	K2-01 DO YOU WORK WITH FM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	4	8	4	0	3	0	8
K 707	K2-02 DO YOU INSPECT FM TRANSMIT OR RECEIVE SYSTEMS	1	8	0	0	3	0	0
K 708	K2-03 DO YOU CLEAN FM TRANSMIT OR RECEIVE SYSTEMS	1	8	0	0	3	0	0
K 709	K2-04 DO YOU ALIGN FM TRANSMIT OR RECEIVE SYSTEMS	1	8	0	0	3	0	0
K 710	K2-05 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE SYSTEMS	1	8	0	0	3	0	0
K 711	K2-06 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE COMPONENTS	1	8	0	0	3	0	0
K 712	K2-07 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	0
K 713	K2-08 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE COMPONENTS	1	8	0	0	3	0	0
K 714	K2-09 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	3	8	2	0	3	0	4
K 715	K2-10 DO YOU PERFORM TASKS ON FREQUENCY MULTIPLIERS	3	8	2	0	3	0	4

FM SYSTEMS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task ID	Description	SPC 026	SPC 027	SPC 028	SPC 029	SPC 030	SPC 031	SPC 032
K 676	K2-11 DO YOU PERFORM TASKS ON DRIVERS (INTERMEDIATE AMPLIFIERS)	1	0	2	0	0	0	4
K 677	K2-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS	1	8	0	0	3	0	0
K 678	K2-13 DO YOU PERFORM TASKS ON RF AMPLIFIERS	1	8	0	0	3	0	0
K 679	K2-14 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	3	8	2	0	3	0	4
K 680	K2-15 DO YOU PERFORM TASKS ON IF AMPLIFIERS	1	0	2	0	0	0	4
K 681	K2-16 DO YOU PERFORM TASKS ON LIMITERS	3	8	2	0	3	0	4
K 682	K2-17 DO YOU PERFORM TASKS ON FREQUENCY DISCRIMINATORS	3	8	2	0	3	0	4
K 683	K2-18 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSMITTERS	3	8	2	0	3	0	4
K 684	K2-19 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM RECEIVERS	3	8	2	0	3	0	4
K 685	K3-01 DO YOU CONVERT DECIMAL (BASE 10) NUMBERS TO OCTAL (BASE 8) NUMBERS	56	62	55	33	61	100	38
K 686	K3-02 DO YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2) NUMBERS	76	69	78	67	81	100	67
K 687	K3-03 DO YOU CONVERT OCTAL NUMBERS TO DECIMAL NUMBERS	59	69	56	33	68	100	38
K 688	K3-04 DO YOU CONVERT OCTAL NUMBERS TO BINARY NUMBERS	57	69	55	33	68	100	33
K 689	K3-05 DO YOU CONVERT BINARY NUMBERS TO DECIMAL NUMBERS	79	77	80	67	87	100	67
K 690	K3-06 DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS	59	69	56	33	71	100	33
K 691	K3-07 DO YOU ADD BINARY NUMBERS TO GET A SUM	60	69	58	33	77	100	33
K 692	K3-08 DO YOU SUBTRACT BINARY NUMBERS USING THE END-AROUND-CARRY METHOD	38	54	35	0	52	100	13
K 693	K3-09 DO YOU SUBTRACT BINARY NUMBERS USING THE DIRECT SUBTRACTION METHOD	46	46	45	0	61	67	25
K 694	K3-10 DO YOU ADD OCTAL NUMBERS TO GET A SUM	51	62	49	33	68	100	21
L 695	L1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO LOGIC FUNCTIONS	82	85	82	67	90	67	79
L 696	L1-02 DO YOU CONSTRUCT TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES	60	54	62	33	68	33	50
L 697	L1-03 DO YOU CONSTRUCT TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES	59	46	62	0	68	33	50
L 698	L1-04 DO YOU CONSTRUCT TRUTH TABLES FOR AND OR LOGIC SYMBOLS WITH STATE INDICATORS	59	46	62	0	68	33	50
L 699	L1-05 DO YOU CONSTRUCT TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS OR GATES	59	46	62	0	68	33	50
L 700	L1-06 DO YOU USE OR REFER TO TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES	72	62	75	0	84	67	63
L 701	L1-07 DO YOU USE OR REFER TO TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES	72	62	75	0	84	67	63
L 702	L1-08 DO YOU USE OR REFER TO TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS	74	62	76	0	84	67	67
L 703	L1-09 DO YOU USE OR REFER TO TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS	69	62	71	0	77	67	63
L 704	L1-10 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR AND GATES	82	69	85	0	90	67	83
L 705	L1-11 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR OR GATES	82	69	85	0	90	67	83
L 706	L1-12 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR NAND OR NOR GATES	81	85	80	33	90	67	75

NUMBERING SYSTEMS

LOGIC FUNCTIONS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

0Y-TSK

	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	026	027	028	029	030	031	032	033	034	035	036	037	038
L 707 L1-13 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR EXCLUSIVE OR GATES	78	69	80	0	87	67	76						
L 708 L2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO BOOLEAN EQUATIONS, LOGIC DIAGRAMS, OR LOGIC CIRCUITS	66	62	67	67	84	67	46						
L 709 L2-02 DO YOU DRAW LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUITS	25	0	31	0	32	0	21						
L 710 L2-03 DO YOU CONSTRUCT TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS	12	0	15	0	16	0	8						
L 711 L2-04 DO YOU DRAW LOGIC DIAGRAMS FROM GIVEN BOOLEAN EQUATIONS	35	23	38	33	48	33	13						
L 712 L2-05 DO YOU MEASURE INPUTS OR OUTPUTS OF LOGIC GATES	69	69	69	67	84	33	54						
L 713 L2-06 DO YOU DEVELOP OR ANALYZE BOOLEAN EQUATIONS IN THE PROCESS OF TROUBLESHOOTING DIGITAL CIRCUITS	41	38	42	33	58	33	17						
L 714 L2-07 DO YOU ANALYZE LOGIC CIRCUITS BY USING BOOLEAN ALGEBRA	41	38	42	33	52	67	17						
L 715 L2-08 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUIT GATES	32	8	38	0	39	0	38						
L 716 L2-09 DO YOU USE OR REFER TO TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS	15	8	16	0	16	0	17						
L 717 L2-10 DO YOU USE OR REFER TO LOGIC DIAGRAMS CONSISTING OF MORE THAN ONE GATE	65	54	67	33	77	67	50						
L 718 L2-11 DO YOU COMPUTE SUM AND CARRY EXPRESSIONS FOR SERIAL HALF OR FULL ADDER LOGIC DIAGRAMS	22	8	25	0	32	0	17						
L 719 L2-12 DO YOU TRACE DATA FLOW THROUGH PARALLEL FULL ADDER LOGIC DIAGRAMS	28	15	31	0	39	0	21						
L 720 L2-13 DO YOU WORK WITH ASTABLE (FREE RUNNING) MULTIVIBRATORS	60	54	62	67	77	33	46						
L 721 L2-14 DO YOU WORK WITH BISTABLE (FLIP-FLOP) MULTIVIBRATORS	66	54	69	67	84	33	50						
L 722 L2-15 DO YOU WORK WITH MONOSTABLE (ONE-SHOT) MULTIVIBRATORS	63	54	65	67	84	67	42						
L 723 L2-16 DO YOU USE OR REFER TO FLIP-FLOP MULTIVIBRATOR SYMBOLS	68	62	69	33	84	67	50						
L 724 L2-17 DO YOU USE OR REFER TO SINGLE-SHOT MULTIVIBRATOR SYMBOLS	60	54	62	33	84	33	42						
L 725 L2-18 DO YOU USE OR REFER TO FLIP-FLOP CIRCUIT DIAGRAMS	71	69	71	67	87	67	50						
L 726 L2-19 DO YOU USE OR REFER TO FLIP-FLOP TRUTH TABLES	63	69	62	67	84	67	33						
L 727 L2-20 DO YOU USE OR REFER TO COMPLEMENTED FLIP-FLOP LOGIC SYMBOLS	53	38	56	0	71	0	38						
L 728 L2-21 DO YOU USE OR REFER TO COMPLEMENTING FLIP-FLOP LOGIC SYMBOLS	54	38	58	0	74	0	42						
L 729 L2-22 DO YOU MEASURE OUTPUT WAVESHAPES OF LOGIC CIRCUITS	63	67	62	67	77	33	50						
L 730 L2-23 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTED FLIP-FLOP SCHEMATIC DIAGRAMS	50	38	53	33	65	0	38						
L 731 L2-24 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTING FLIP-FLOP SCHEMATIC DIAGRAMS	51	38	55	33	65	0	46						
L 732 L2-25 DO YOU CONSTRUCT TRUTH TABLES FOR J-K FLIP-FLOP LOGIC SYMBOLS	34	0	42	0	42	0	21						

BOOLEAN EQUATIONS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	026	027	028	029	030	031	032	033	034	035	036	037	038
L 733 L3-01 DO YOU WORK WITH DIGITAL COUNTERS IN YOUR PRESENT JOB	72	69	73	100	71	67	67						
L 734 L3-02 DO YOU USE OR REFER TO UP-COUNTERS	66	62	67	100	74	33	54						
L 735 L3-03 DO YOU USE OR REFER TO DOWN-COUNTERS	63	54	65	67	74	33	50						
L 736 L3-04 DO YOU USE OR REFER TO SERIAL COUNTERS	68	69	67	100	71	67	54						
L 737 L3-05 DO YOU USE OR REFER TO PARALLEL COUNTERS	63	62	64	67	74	67	42						
L 738 L3-06 DO YOU USE OR REFER TO RING COUNTERS	59	54	60	100	71	33	33						
L 739 L3-07 DO YOU USE OR REFER TO DECADE COUNTERS	32	31	33	33	45	33	17						
L 740 L3-08 DO YOU USE OR REFER TO COUNT DETECT CIRCUITS	44	38	45	33	52	67	29						
L 741 L3-09 DO YOU USE OR REFER TO DOWN CLOCKS	50	38	53	33	68	33	25						
L 742 L3-10 DO YOU USE OR REFER TO UP CLOCKS	50	31	55	0	71	33	25						
L 743 L3-11 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	56	46	58	67	65	0	46						
L 744 L3-12 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-FLOPS	54	38	58	67	65	0	46						
L 745 L3-13 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF DECADE COUNTERS	34	38	33	67	45	33	17						
L 746 L3-14 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF RING COUNTERS	57	46	60	100	65	33	34						
L 747 L3-15 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER	54	46	56	67	65	67	38						
L 748 L3-16 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	69	62	71	100	71	67	58						
L 749 L3-17 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF COUNTERS	44	38	45	67	48	33	29						
L 750 L3-18 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	47	38	49	67	55	0	38						
L 751 L3-19 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-FLOPS	51	31	56	33	61	33	42						
L 752 L3-20 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER	51	31	56	33	58	67	42						
L 753 L3-21 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR OTHER TYPES OF COUNTERS	46	23	51	33	45	33	46						
L 754 L3-22 DO YOU CONSTRUCT TRUTH TABLES FROM LOGIC DIAGRAMS OF DECADE COUNTERS	24	15	25	33	39	0	4						
L 755 L3-23 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP IN RING COUNTERS FOR SPECIFIC INPUT PULSES	56	62	55	100	68	67	29						
L 756 L3-24 DO YOU DETERMINE THE APPROPRIATE AND GATE NECESSARY IN COUNT DETECT CIRCUITS TO INDICATE A REQUIRED COUNT	54	46	56	33	55	67	50						
M 757 HI-01 DO YOU WORK WITH SAWTOOTH WAVE GENERATORS	34	23	36	0	45	33	13						
M 758 HI-02 DO YOU WORK WITH TRAPEZOIDAL WAVE GENERATORS	16	15	16	0	19	33	8						
M 759 HI-03 DO YOU WORK WITH PULSED OSCILLATORS WITH REGENERATIVE FEEDBACK	34	23	36	0	45	33	25						
M 760 HI-04 DO YOU WORK WITH PULSED OSCILLATORS WITHOUT REGENERATIVE FEEDBACK	32	23	35	0	39	33	25						

COUNTERS

TIMING CIRCUITS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DI-TSK	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	026	027	028	029	030	031	032				
M 761 M1-05 DO YOU WORK WITH BLOCKING OSCILLATORS	32	23	35	0	38	67	33				
M 762 M1-06 DO YOU USE OR REFER TO RISE TIME	49	38	51	0	61	100	25				
M 763 M1-07 DO YOU USE OR REFER TO FALL OR FLYBACK TIME	40	31	42	0	55	100	25				
M 764 M1-08 DO YOU USE OR REFER TO SWEEP TIME	50	46	51	0	65	100	25				
M 765 M1-09 DO YOU USE OR REFER TO ELECTRICAL LENGTH OF SAWTOOTH WAVEFORMS	28	15	31	0	39	33	8				
M 766 M1-10 DO YOU USE OR REFER TO PHYSICAL LENGTH OF SAWTOOTH WAVEFORMS	24	15	25	0	32	33	8				
M 767 M1-11 DO YOU USE OR REFER TO LINEAR SLOPE OF SAWTOOTH WAVEFORMS	13	15	13	0	19	33	4				
M 768 M1-12 DO YOU USE OR REFER TO GATE LENGTH OF SAWTOOTH WAVEFORMS	18	23	16	0	26	33	4				
M 769 M2-01 DO YOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB	57	54	58	0	65	67	54				
M 770 M2-02 DO YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL GENERATORS	54	54	55	0	61	67	50				
M 771 M2-03 DO YOU PERFORM PERIODIC MAINTENANCE SUCH AS ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL GENERATORS	46	54	44	0	55	67	33				USE OF SIGNAL GENERATORS
M 772 M2-04 DO YOU TROUBLESHOOT TO AN ASSEMBLY OR SUBASSEMBLY WHILE USING SIGNAL GENERATORS	41	54	38	0	42	67	38				
M 773 M2-05 DO YOU TROUBLESHOOT TO THE SMALLEST REPLACEABLE COMPONENT WHILE USING SIGNAL GENERATORS	32	38	31	0	32	67	29				
M 774 M2-06 DO YOU USE AUDIO SINE-WAVE GENERATORS	41	15	47	0	48	33	92				
M 775 M2-07 DO YOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH AS SQUARE WAVE, TRIANGLE, PULSE, OR SPIKE	12	15	11	0	10	33	17				
M 776 M2-08 DO YOU USE RF GENERATORS LESS THAN 1,000 MH	4	8	4	0	6	0	4				
M 777 M2-09 DO YOU USE RF GENERATORS GREATER THAN 1,000 MH	1	0	2	0	3	0	0				
M 778 M2-10 DO YOU USE OTHER SPECIAL PURPOSE OR MULTI-FUNCTION GENERATORS	19	31	16	0	29	0	8				
M 779 M3-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS OR GENERATORS	24	8	27	0	26	0	21				
M 780 M3-02 DO YOU INSPECT MOTORS	21	8	24	0	23	0	17				
M 781 M3-03 DO YOU CLEAN OR LUBRICATE MOTORS	19	8	22	0	23	0	17				
M 782 M3-04 DO YOU OPERATE MOTORS	21	8	24	0	23	0	21				
M 783 M3-05 DO YOU REMOVE OR REPLACE COMPLETE MOTORS	19	8	22	0	23	0	17				
M 784 M3-06 DO YOU REMOVE OR REPLACE MOTOR PARTS	13	0	16	0	16	0	13				MOTORS AND GENERATORS
M 785 M3-07 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF MOTORS	21	8	24	0	23	0	21				
M 786 M3-08 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS	12	0	15	0	16	0	8				
M 787 M3-09 DO YOU PERFORM ANY TASKS ON FIELD COILS	7	0	9	0	16	0	0				
M 788 M3-10 DO YOU PERFORM ANY TASKS ON ARMATURES	7	0	9	0	13	0	0				
M 789 M3-11 DO YOU PERFORM ANY TASKS ON ROTORS	9	0	11	0	16	0	0				
M 790 M3-12 DO YOU PERFORM ANY TASKS ON BRUSHES	7	0	9	0	13	0	0				
M 791 M3-13 DO YOU PERFORM ANY TASKS ON SLIP RINGS	6	0	7	0	13	0	0				
M 792 M3-14 DO YOU PERFORM ANY TASKS ON COMMUTATORS	6	0	7	0	13	0	0				
M 793 M3-15 DO YOU PERFORM ANY TASKS ON POLE PIECES	6	0	7	0	13	0	0				

PCT MBR5 RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UY-TSK	SPC 026	SPC 027	SPC 028	SPC 029	SPC 030	SPC 031	SPC 032
M 784 M3-16 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OF THE FORCE OR TORQUE CREATED BY A MOTOR	3	0	4	0	6	0	0
M 785 M3-17 DO YOU DETERMINE OR MEASURE THE DIRECTION OF THE MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR	7	8	7	0	13	0	4
M 796 M3-18 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OR DIRECTION OF THE INDUCED VOLTAGE IN MOTORS	3	0	4	0	6	0	0
M 797 M3-19 DO YOU WORK WITH SYNCHRONOUS MOTORS	7	8	7	0	16	0	0
M 798 M3-20 DO YOU WORK WITH INDUCTION MOTORS	7	8	7	0	10	0	8
M 799 M3-21 DO YOU WORK WITH SPLIT-PHASE MOTORS	4	0	5	0	10	0	0
M 800 M3-22 DO YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS	7	8	7	0	13	0	0
M 801 M3-23 DO YOU INSPECT GENERATORS	9	8	9	0	13	0	4
M 802 M3-24 DO YOU CLEAN OR LUBRICATE GENERATORS	4	0	5	0	10	0	0
M 803 M3-25 DO YOU OPERATE GENERATORS	6	0	7	0	10	0	0
M 804 M3-26 DO YOU REMOVE OR REPLACE COMPLETE GENERATORS	3	0	4	0	6	0	0
M 805 M3-27 DO YOU REMOVE OR REPLACE GENERATOR PARTS	3	0	4	0	6	0	0
M 806 M3-28 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF GENERATORS	3	0	4	0	6	0	0
M 807 M3-29 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF GENERATORS	3	0	4	0	6	0	0
N 808 N1-01 DO YOU WORK WITH METERS IN YOUR PRESENT JOB	75	46	82	33	81	67	71
N 809 N1-02 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF PERMANENT MAGNETS	16	8	18	0	29	33	4
N 810 N1-03 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF MOVING COILS	25	8	29	0	39	33	8
N 811 N1-04 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF SPIRAL SPRINGS	15	8	16	0	23	67	4
N 812 N1-05 DO YOU READ METER SCALES	76	54	82	67	81	67	71
N 813 N1-06 DO YOU EXTEND THE RANGE OF AMMETERS	40	31	42	33	35	67	33
N 814 N1-07 DO YOU ZERO OHMMETERS	75	54	80	67	81	67	67
N 815 N1-08 DO YOU ZERO VOLTMETERS	38	15	44	33	39	0	33
N 816 N1-09 DO YOU EXTEND THE RANGE OF VOLTMETERS	44	31	47	33	45	67	33
N 817 N1-10 DO YOU USE OR REFER TO VOLTMETER SENSITIVITY (EXPRESSED IN UNITS OF OHMS PER VOLT)	43	38	44	0	61	33	17
N 818 N2-01 DO YOU WORK WITH SATURABLE REACTORS OR MAGNETIC AMPLIFIERS IN YOUR PRESENT JOB	7	0	9	0	10	0	4
N 819 N2-02 DO YOU INSPECT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	4	0	5	0	10	0	0
N 820 N2-03 DO YOU CLEAN MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	4	0	5	0	10	0	0
N 821 N2-04 DO YOU ADJUST MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	1	0	2	0	3	0	0
N 822 N2-05 DO YOU TROUBLESHOOT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	6	0	7	0	10	0	4
N 823 N2-06 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	6	0	7	0	10	0	4
N 824 N2-07 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIER OR SATURABLE REACTOR COMPONENTS	4	0	5	0	6	0	4

METER MOVEMENTS

SATURABLE REACTORS

AND MAGNETIC AMPLIFIERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task Description	SPC 026	SPC 027	SPC 028	SPC 029	SPC 030	SPC 031	SPC 032
N 825 N2-08 DO YOU USE OR REFER TO HYSTERESIS CURVES OR LOOPS	6	0	7	0	10	0	4
N 826 N2-09 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE REACTORS	3	0	4	0	6	0	0
N 827 N2-10 DO YOU MEASURE OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE REACTORS	3	0	4	0	6	0	0
N 828 N2-11 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS FOR MAGNETIC AMPLIFIERS	6	0	7	0	10	0	4
N 829 N2-12 DO YOU USE OR REFER TO COERCIVE FORCE IN SATURABLE REACTORS	1	0	2	0	3	0	0
N 830 N2-13 DO YOU USE OR REFER TO RESIDUAL MAGNETISM IN SATURABLE REACTORS	6	0	7	0	10	0	4
N 831 N2-14 DO YOU USE OR REFER TO FLUX DENSITY IN SATURABLE REACTORS	4	0	5	0	10	0	0
N 832 N2-15 DO YOU USE OR REFER TO POINT OF SATURATION IN SATURABLE REACTORS	4	0	5	0	10	0	0
N 833 N2-16 DO YOU USE OR REFER TO SATURABLE REACTOR SCHEMATIC SYMBOLS	4	0	5	0	10	0	0
N 834 N3-01 DO YOU WORK WITH WAVESHAPING CIRCUITS IN YOUR PRESENT JOB	43	23	47	0	48	100	38
N 835 N3-02 DO YOU USE OR REFER TO TRANSIENT INTERVALS	24	23	24	0	32	67	8
N 836 N3-03 DO YOU USE OR REFER TO PULSE WIDTH (PW)	41	23	45	0	45	100	38
N 837 N3-04 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)	37	15	42	0	45	67	33
N 838 N3-05 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)	32	23	35	0	42	100	21
N 839 N3-06 DO YOU USE OR REFER TO DIFFERENTIATING CIRCUITS	26	23	27	0	35	67	17
N 840 N3-07 DO YOU USE OR REFER TO INTEGRATING CIRCUITS	29	23	31	0	39	67	21
N 841 N3-08 DO YOU USE OR REFER TO THE CLASSIFICATION OF TIME CONSTANTS (TC) AS LONG, MEDIUM, OR SHORT	24	15	25	0	35	67	8
N 842 N3-09 DO YOU DETERMINE WHETHER AN LR OR RC CIRCUIT IS DIFFERENTIATING OR INTEGRATING BASED ON THE TIME CONSTANT AND OUTPUT CONFIGURATION	7	0	9	0	16	0	0
N 843 N3-10 DO YOU WORK WITH SQUARE WAVE GENERATORS	34	15	38	0	42	67	29
N 844 N3-11 DO YOU WORK WITH RECTANGULAR WAVE GENERATORS	10	0	13	0	13	33	8
0 845 01-01 DO YOU WORK ON SINGLE SIDEBAND SYSTEMS IN YOUR PRESENT JOB	0	0	0	0	0	0	0
0 846 01-02 DO YOU INSPECT 5SB TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	0
0 847 01-03 DO YOU CLEAN 5SB TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	0
0 848 01-04 DO YOU ALIGN 5SB TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	0
0 849 01-05 DO YOU TROUBLESHOOT TO 5SB TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	0
0 850 01-06 DO YOU TROUBLESHOOT TO 5SB TRANSMIT OR RECEIVE COMPONENTS	0	0	0	0	0	0	0
0 851 01-07 DO YOU REMOVE OR REPLACE 5SB TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	0
0 852 01-08 DO YOU REMOVE OR REPLACE 5SB TRANSMIT OR RECEIVE COMPONENTS	0	0	0	0	0	0	0

WAVESHAPING CIRCUITS

SINGLE SIDEBAND SYSTEMS

PCT MRS RESPONDING *YES* BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

0	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
0	026	027	028	029	030	031	032	033	034	035	036	037
0 853 01-09 DO YOU PERFORM TASKS ON SSB AUDIO AMPLIFIERS	0	0	0	0	0	0	0	0	0	0	0	0
0 854 01-10 DO YOU PERFORM TASKS ON SSB BALANCED MODULATORS	0	0	0	0	0	0	0	0	0	0	0	0
0 855 01-11 DO YOU PERFORM TASKS ON SSB CARRIER OSCILLATORS	0	0	0	0	0	0	0	0	0	0	0	0
0 856 01-12 DO YOU PERFORM TASKS ON SSB LC FILTERS	0	0	0	0	0	0	0	0	0	0	0	0
0 857 01-13 DO YOU PERFORM TASKS ON SSB CRYSTAL FILTERS	0	0	0	0	0	0	0	0	0	0	0	0
0 858 01-14 DO YOU PERFORM TASKS ON SSB MECHANICAL FILTERS	0	0	0	0	0	0	0	0	0	0	0	0
0 859 01-15 DO YOU PERFORM TASKS ON SSB OSCILLATORS	0	0	0	0	0	0	0	0	0	0	0	0
0 860 01-16 DO YOU PERFORM TASKS ON SSB MIXERS	0	0	0	0	0	0	0	0	0	0	0	0
0 861 01-17 DO YOU PERFORM TASKS ON SSB DRIVERS	0	0	0	0	0	0	0	0	0	0	0	0
0 862 01-18 DO YOU PERFORM TASKS ON SSB POWER AMPLIFIERS	0	0	0	0	0	0	0	0	0	0	0	0
0 863 01-19 DO YOU PERFORM TASKS ON SSB RF AMPLIFIERS	0	0	0	0	0	0	0	0	0	0	0	0
0 864 01-20 DO YOU PERFORM TASKS ON SSB FREQUENCY CONVERTERS	0	0	0	0	0	0	0	0	0	0	0	0
0 865 01-21 DO YOU PERFORM TASKS ON SSB IF AMPLIFIERS	0	0	0	0	0	0	0	0	0	0	0	0
0 866 01-22 DO YOU PERFORM TASKS ON SSB DEMODULATORS	0	0	0	0	0	0	0	0	0	0	0	0
0 867 01-23 DO YOU PERFORM TASKS ON SSB DON'T REMEMBER WHICH SSB SYSTEM STAGES	0	0	0	0	0	0	0	0	0	0	0	0
0 868 01-24 DO YOU USE OR REFER TO SELECTIVE FADING	0	0	0	0	0	0	0	0	0	0	0	0
0 869 01-25 DO YOU USE OR REFER TO PEAK POWER	0	0	0	0	0	0	0	0	0	0	0	0
0 870 01-26 DO YOU USE OR REFER TO FREQUENCY STABILITY	0	0	0	0	0	0	0	0	0	0	0	0
0 871 01-27 DO YOU USE OR REFER TO RESPONSE CURVES FOR BANDWIDTH FILTERS	0	0	0	0	0	0	0	0	0	0	0	0
0 872 01-28 DO YOU CALCULATE PEAK POWER OR EFFECTIVE POWER OF SSB TRANSMITTERS	0	0	0	0	0	0	0	0	0	0	0	0
0 873 01-29 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB TRANSMITTER SCHEMATIC DIAGRAMS	0	0	0	0	0	0	0	0	0	0	0	0
0 874 01-30 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB RECEIVER SCHEMATIC DIAGRAMS	0	0	0	0	0	0	0	0	0	0	0	0
0 875 02-01 DO YOU WORK ON PULSE MODULATION SYSTEMS IN YOUR PRESENT JOB	21	8	24	0	16	33	33					
0 876 02-02 DO YOU INSPECT PULSE MODULATION SYSTEMS	16	8	18	0	16	0	25					
0 877 02-03 DO YOU CLEAN PULSE MODULATION SYSTEMS	12	8	13	0	16	0	13					
0 878 02-04 DO YOU ALIGN PULSE MODULATION SYSTEMS	7	8	7	0	16	0	0					
0 879 02-05 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS	18	8	20	0	16	0	29					
0 880 02-06 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEM COMPONENTS	15	8	16	0	16	0	21					
0 881 02-07 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS COMPONENTS	13	8	15	0	16	0	17					
0 882 02-08 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEM COMPONENTS	15	8	16	0	16	0	21					
0 883 02-09 DO YOU WORK ON PULSE-AMPLITUDE MODULATION (PAM) SYSTEMS	16	8	18	0	13	33	25					
0 884 02-10 DO YOU WORK ON PULSE-DURATION MODULATION (PDM) SYSTEMS	7	8	7	0	10	33	4					
0 885 02-11 DO YOU WORK ON PULSE-POSITION MODULATION (PPM) SYSTEMS	13	8	15	0	10	33	21					
0 886 02-12 DO YOU WORK ON PULSE-CODE MODULATION (PCM) SYSTEMS	1	0	2	0	3	0	0					
0 887 02-13 DO YOU WORK ON LINE PULSING MODULATION SYSTEMS	3	8	2	0	8	0	0					
0 888 02-14 DO YOU WORK ON DON'T REMEMBER WHICH TYPE OF MODULATION SYSTEM	6	8	5	0	13	0	0					

PULSE MODULATION SYSTEMS

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DI-TSK	SPC 026	SPC 027	SPC 028	SPC 029	SPC 030	SPC 031	SPC 032
0 889 02-15 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER SUPPLIES	10	8	11	0	16	0	8
0 890 02-16 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM CHARGING CHOKES AND CHARGING DIODES	3	0	4	0	6	0	0
0 891 02-17 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE FORMING NETWORKS	13	8	15	0	13	33	17
0 892 02-18 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TIMERS	16	8	18	0	16	0	25
0 893 02-19 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM SWITCHES SUCH AS GAS THYRATRON	1	0	2	0	3	0	0
0 894 02-20 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE TRANSFORMERS	6	8	5	0	10	0	4
0 895 02-21 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TRANSMITTER TUBES	1	0	2	0	3	0	0
0 896 02-22 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM RF AMPLIFIERS	3	8	2	0	6	0	0
0 897 02-23 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM FREQUENCY CONVERTERS	10	8	11	0	13	0	13
0 898 02-24 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM IF AMPLIFIERS	1	0	2	0	3	0	0
0 899 02-25 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DETECTORS	9	8	9	0	10	33	8
0 900 02-26 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM VIDEO AMPLIFIERS	1	0	2	0	3	0	0
0 901 02-27 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER VIDEO AMPLIFIERS	1	0	2	0	3	0	0
0 902 02-28 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DON'T REMEMBER WHICH PULSE MODULATION SYSTEM STAGES (PRF)	4	8	4	0	6	0	4
0 903 02-29 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)	10	8	11	0	13	33	8
0 904 02-30 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)	10	8	11	0	13	33	8
0 905 02-31 DO YOU USE OR REFER TO PULSE WIDTH (PW)	15	8	16	0	16	33	17
0 906 02-32 DO YOU USE OR REFER TO PULSE SHAPE	15	8	16	0	16	33	17
0 907 02-33 DO YOU USE OR REFER TO PEAK POWER	9	8	9	0	16	0	4
0 908 02-34 DO YOU USE OR REFER TO AVERAGE POWER	6	8	5	0	13	0	0
0 909 02-35 DO YOU CALCULATE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)	3	0	4	0	6	0	0
0 910 02-36 DO YOU MEASURE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)	9	0	11	0	13	0	8
0 911 02-37 DO YOU USE FORMULAS TO CALCULATE AVERAGE POWER OR PEAK POWER OF PULSE MODULATION TRANSMIT SYSTEMS	3	0	4	0	6	0	0
0 912 02-38 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION TRANSMITTER SCHEMATIC DIAGRAMS	12	8	13	0	16	0	13
0 913 02-39 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION RECEIVER SCHEMATIC DIAGRAMS	12	8	13	0	16	33	8
0 914 03-01 DO YOU WORK WITH ANTENNAS IN YOUR PRESENT JOB	0	0	0	0	0	0	0
0 915 03-02 DO YOU INSPECT ANTENNAS	0	0	0	0	0	0	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DT-TSK	SPC 026	SPC 027	SPC 028	SPC 029	SPC 030	SPC 031	SPC 032
0 914 03-03 DO YOU CLEAN ANTENNAS	0	0	0	0	0	0	0
0 917 03-04 DO YOU PHYSICALLY ALIGN ANTENNAS	0	0	0	0	0	0	0
0 918 03-05 DO YOU ELECTRICALLY ALIGN ANTENNAS	0	0	0	0	0	0	0
0 919 03-06 DO YOU TROUBLESHOOT TO ANTENNAS	0	0	0	0	0	0	0
0 920 03-07 DO YOU TROUBLESHOOT TO ANTENNA COMPONENTS	0	0	0	0	0	0	0
0 921 03-08 DO YOU REMOVE OR INSTALL ANTENNAS	0	0	0	0	0	0	0
0 922 03-09 DO YOU REMOVE OR REPLACE COMPONENTS OF ANTENNAS	0	0	0	0	0	0	0
0 923 03-10 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF E OR ELECTRIC FIELD LINES	0	0	0	0	0	0	0
0 924 03-11 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF H OR MAGNETIC FIELD LINES	0	0	0	0	0	0	0
0 925 03-12 DO YOU DETERMINE THE DIRECTION OF THE MAGNETIC LINES IN RELATION TO THE ELECTRIC LINES OF FORCE FOR ANTENNAS	0	0	0	0	0	0	0
0 926 03-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE OF CORRECT LENGTH (HALF-WAVE) ACT AS INDUCTIVE LOADS TO THE GENERATOR	0	0	0	0	0	0	0
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 TO THE GENERATOR	0	0	0	0	0	0	0
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 TO THE GENERATOR	0	0	0	0	0	0	0
0 929 03-16 DO YOU WORK WITH HERTZ ANTENNAS	0	0	0	0	0	0	0
0 930 03-17 DO YOU WORK WITH MARCONI ANTENNAS	0	0	0	0	0	0	0
0 931 03-18 DO YOU WORK WITH BROADSIDE ARRAYS	0	0	0	0	0	0	0
0 932 03-19 DO YOU WORK WITH END-FIRE ARRAYS	0	0	0	0	0	0	0
0 933 03-20 DO YOU WORK WITH CARBONOID ARRAYS	0	0	0	0	0	0	0
0 934 03-21 DO YOU WORK WITH COLLINAR ARRAYS	0	0	0	0	0	0	0
0 935 03-22 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC INDUCTION FIELDS WHEN WORKING WITH ANTENNAS	0	0	0	0	0	0	0
0 936 03-23 DO YOU MEASURE ELECTROMAGNETIC INDUCTION FIELDS OF ANTENNAS	0	0	0	0	0	0	0
0 937 03-24 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC RADIATION FIELDS WHEN WORKING WITH ANTENNAS	0	0	0	0	0	0	0
0 938 03-25 DO YOU MEASURE ELECTROMAGNETIC RADIATION FIELDS OF ANTENNAS	0	0	0	0	0	0	0
0 939 03-26 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA RADIATION	0	0	0	0	0	0	0
0 940 03-27 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA INDUCTION FIELD	0	0	0	0	0	0	0
0 941 03-28 ARE ANY OF THE ANTENNAS YOU WORK ON LINEARLY POLARIZED	0	0	0	0	0	0	0
0 942 03-29 ARE ANY OF THE ANTENNAS YOU WORK ON CIRCULARLY POLARIZED	0	0	0	0	0	0	0
0 943 03-30 DO YOU MEASURE OR DETERMINE THE POLARITY OF ANTENNAS YOU WORK ON	0	0	0	0	0	0	0
0 944 03-31 DO YOU CONSTRUCT, OR MAKE THE CALCULATIONS NECESSARY TO CONSTRUCT, ANTENNAS OF CORRECT LENGTH FOR SPECIFIC WAVELENGTHS	0	0	0	0	0	0	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

BY-TSK	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	026	027	028	029	030	031	032	033	034	035
0 945 03-32 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS	0	0	0	0	0	0	0	0	0	0
0 946 03-33 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS DIRECTORS	0	0	0	0	0	0	0	0	0	0
0 947 03-34 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS REFLECTORS	0	0	0	0	0	0	0	0	0	0
0 948 03-35 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN DON'T REMEMBER WHAT KIND OF ELEMENTS	0	0	0	0	0	0	0	0	0	0
0 949 03-36 DO YOU WORK ON UNIDIRECTIONAL ANTENNAS	0	0	0	0	0	0	0	0	0	0
0 950 03-37 DO YOU WORK ON BIDIRECTIONAL ANTENNAS	0	0	0	0	0	0	0	0	0	0
0 951 03-38 DO YOU WORK ON DON'T REMEMBER THE DIRECTIONALITY	0	0	0	0	0	0	0	0	0	0
0 952 03-39 DO YOU WORK WITH ROTAR ANTENNA ARRAYS	0	0	0	0	0	0	0	0	0	0
P 953 PI-01 IN YOUR PRESENT JOB DO YOU WORK WITH TRANSMISSION LINES (TRANSMISSION LINES ARE DEFINED TO INCLUDE LEADS BETWEEN RECEIVERS AND ANTENNAS, TELEPHONE LEADS, AS WELL AS HIGH VOLTAGE POWER LINES, ETC. DO NOT CONSIDER WAVEGUIDES AS TRANSMISSION LINES)	46	31	49	0	39	100	67			
P 954 PI-02 DO YOU REFER TO OR USE COPPER LOSS OR IZR LOSS IN TRANSMISSION LINES	1	0	2	0	3	0	0			
P 955 PI-03 DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY CURRENTS IN TRANSMISSION LINES	0	0	0	0	0	0	0			
P 956 PI-04 DO YOU REFER TO OR USE RADIATION LOSS IN TRANSMISSION LINES	1	0	2	0	0	33	0			
P 957 PI-05 DO YOU USE OR REFER TO DIELECTRIC LOSS IN TRANSMISSION LINES	1	0	2	0	3	0	0			
P 958 PI-06 DO YOU USE OR REFER TO LEAKAGE LOSSES IN TRANSMISSION LINES	4	0	5	0	10	0	0			
P 959 PI-07 DO YOU WORK WITH TWISTED PAIR TRANSMISSION LINES	35	23	38	0	23	67	58			
P 960 PI-08 DO YOU WORK WITH TWIN LEAD TRANSMISSION LINES	29	15	33	0	26	0	46			
P 961 PI-09 DO YOU WORK WITH OPEN TWO-WIRE TRANSMISSION LINES	21	8	24	0	19	0	29			
P 962 PI-10 DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION LINES	21	8	24	0	23	33	25			
P 963 PI-11 DO YOU WORK WITH RIGID COAXIAL CABLE TRANSMISSION LINES	7	8	7	0	10	0	8			
P 964 PI-12 DO YOU TROUBLESHOOT TRANSMISSION LINES	37	15	42	0	23	33	67			
P 965 PI-13 DO YOU ANALYZE VOLTAGE OR CURRENT WAVEFORMS IN TRANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION (OPEN, SHORTED, CAPACITIVE, INDUCTIVE)	7	15	5	0	13	0	4			
P 966 PI-14 DO YOU SELECT APPROPRIATE TRANSMISSION LINES TERMINATIONS TO ACHIEVE DESIRED WAVEFORMS	1	0	2	0	3	0	0			
P 967 PI-15 DO YOU USE OR REFER TO SCHEMATIC SYMBOLS FOR LINE TERMINATIONS IN TERMS OF CIRCUIT TERMINATIONS	12	15	11	0	16	33	8			
P 968 PI-16 DO YOU MEASURE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES	0	0	0	0	0	0	0			
P 969 PI-17 DO YOU CALCULATE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES	0	0	0	0	0	0	0			
P 970 PI-18 DO YOU PERFORM THE CALCULATIONS NECESSARY TO DETERMINE THE IMPEDANCE AND LENGTH OF QUARTER - WAVELENGTH MATCHING TRANSFORMERS TO MATCH TRANSMISSION LINES TO LOADS	3	8	2	0	6	0	0			

TRANSMISSION LINES

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UT-TSK

	SPC 026	SPC 027	SPC 028	SPC 029	SPC 030	SPC 031	SPC 032
P 971 P1-19 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING MATCHING TRANSFORMERS	4	0	5	0	6	0	0
P 972 P1-20 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING DELTA MATCHING	1	0	2	0	3	0	0
P 973 P1-21 DO YOU SELECT THE TYPE OF TRANSMISSION LINE NEEDED FOR PARTICULAR JOBS WITHOUT REFERRING TO TECHNICAL DATA	4	0	7	0	4	0	8
P 974 P1-22 DO YOU USE OR REFER TO THE TERM CHARACTERISTIC IMPEDANCE (Z0) OF TRANSMISSION LINES	1	0	2	0	3	0	0
P 975 P1-23 DO YOU CALCULATE THE CHARACTERISTIC IMPEDANCE (Z0) OF TRANSMISSION LINES	1	0	2	0	3	0	0
P 976 P1-24 DO YOU USE OR REFER TO THE TERM CUTOFF FREQUENCY OF TRANSMISSION LINES	4	0	5	0	6	3	0
P 977 P1-25 DO YOU USE OR REFER TO THE TERM VELOCITY FACTOR (K) OF TRANSMISSION LINES	1	0	2	0	3	0	0
P 978 P1-26 DO YOU COMPUTE THE ELECTRICAL LENGTH OF TRANSMISSION LINES FOR PARTICULAR FREQUENCIES	1	0	2	0	3	0	0
P 979 P1-27 DO YOU CONSTRUCT TRANSMISSION LINES OF PARTICULAR ELECTRICAL LENGTH FOR GIVEN FREQUENCIES	1	0	2	0	3	0	0
P 980 P1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT AS THE FREQUENCY INCREASES AND THE PHYSICAL LENGTH OF TRANSMISSION LINES REMAIN CONSTANT, THE ELECTRICAL LENGTH INCREASES	1	0	2	0	3	0	0
P 981 P1-29 DO YOU WORK WITH NONRESONANT (FLAT) TRANSMISSION LINES	7	6	7	0	3	3	13
P 982 P1-30 DO YOU WORK WITH RESONANT TRANSMISSION LINES	4	0	5	0	6	0	4
P 983 P1-31 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING STUB MATCHING	1	0	2	0	3	0	0
P 984 P2-01 DO YOU WORK WITH WAVEGUIDES OR CAVITY RESONATORS IN YOUR PRESENT JOB	0	0	0	0	0	0	0
P 985 P2-02 DO YOU INSPECT WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0	0	0	0
P 986 P2-03 DO YOU CLEAN WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0	0	0	0
P 987 P2-04 DO YOU BEND WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0	0	0	0
P 988 P2-05 DO YOU TWIST WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0	0	0	0
P 989 P2-06 DO YOU PRESSURIZE WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0	0	0	0
P 990 P2-07 DO YOU PURGE WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0	0	0	0
P 991 P2-08 DO YOU TROUBLESHOOT WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0	0	0	0
P 992 P2-09 DO YOU REMOVE OR INSTALL COMPLETE WAVEGUIDES	0	0	0	0	0	0	0
P 993 P2-10 DO YOU REMOVE OR INSTALL WAVEGUIDE SECTIONS	0	0	0	0	0	0	0
P 994 P2-11 DO YOU REMOVE OR INSTALL DUMMY LOADS	0	0	0	0	0	0	0
P 995 P2-12 DO YOU REMOVE OR INSTALL E BENDS	0	0	0	0	0	0	0
P 996 P2-13 DO YOU REMOVE OR INSTALL H BENDS	0	0	0	0	0	0	0
P 997 P2-14 DO YOU REMOVE OR INSTALL OTHER BENDS	0	0	0	0	0	0	0
P 998 P2-15 DO YOU REMOVE OR INSTALL CHOKES	0	0	0	0	0	0	0
P 999 P2-16 DO YOU REMOVE OR INSTALL ROTATING JOINTS	0	0	0	0	0	0	0
P1000 P2-17 DO YOU REMOVE OR INSTALL DIRECTIONAL COUPLERS	0	0	0	0	0	0	0
P1001 P2-18 DO YOU REMOVE OR INSTALL BIDIRECTIONAL COUPLERS	0	0	0	0	0	0	0
P1002 P2-19 DO YOU USE OR REFER TO "A" WALL OF WAVEGUIDES	0	0	0	0	0	0	0

WAVEGUIDES AND CAVITY RESONATORS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UY-TSK	SPC 026	SPC 027	SPC 028	SPC 029	SPC 030	SPC 031	SPC 032
P1003 P2-20 DO YOU USE OR REFER TO "B" WALL OF WAVEGUIDES	0	0	0	0	0	0	0
P1004 P2-21 DO YOU USE OR REFER TO CUTOFF FREQUENCY OF WAVEGUIDES	0	0	0	0	0	0	0
P1005 P2-22 DO YOU USE OR REFER TO FREQUENCY-DETERMINING WALL OF WAVEGUIDES	0	0	0	0	0	0	0
P1006 P2-23 DO YOU USE OR REFER TO POWER-DETERMINING WALL OF WAVEGUIDES	0	0	0	0	0	0	0
P1007 P2-24 DO YOU USE OR REFER TO ELECTRIC FIELD BOUNDARY CONDITIONS	0	0	0	0	0	0	0
P1008 P2-25 DO YOU USE OR REFER TO MAGNETIC FIELD BOUNDARY CONDITIONS	0	0	0	0	0	0	0
P1009 P2-26 DO YOU USE OR REFER TO DUPLEXER FIELD BOUNDARY CONDITIONS	0	0	0	0	0	0	0
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 OF THE OPERATING FREQUENCY	0	0	0	0	0	0	0
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 USED AS AN AVERAGE	0	0	0	0	0	0	0
P1012 P2-29 ARE YOU CONCERNED WITH THE MATERIAL (SUCH AS BRASS) WHICH WAVEGUIDES ARE MADE OF	0	0	0	0	0	0	0
P1013 P2-30 DO YOU COMPUTE THE LENGTH OF A WAVEGUIDE FOR SPECIFIC INSTALLATION	0	0	0	0	0	0	0
P1014 P2-31 DO YOU USE THE RIGHT HAND RULE TO DETERMINE THE DIRECTION OF PROPAGATION, DIRECTION OF "E" FIELD, OR DIRECTION OF "H" FIELD IN WAVEGUIDES	0	0	0	0	0	0	0
P1015 P2-32 DO YOU USE OR REFER TO THE TIME PHASE OF PEAK "E" OR "H" LINES IN WAVEGUIDES	0	0	0	0	0	0	0
P1016 P2-33 DO YOU MEASURE THE TIME PHASE OF "E" OR "H" LINES IN WAVEGUIDES	0	0	0	0	0	0	0
P1017 P2-34 DO YOU USE OR REFER TO THE SPACE QUADRATURE OF "E" OR "H" LINES IN WAVEGUIDES	0	0	0	0	0	0	0
P1018 P2-35 ARE HIGH POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0	0	0	0
P1019 P2-36 ARE LOW POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0	0	0	0
P1020 P2-37 ARE LOOPS USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0	0	0	0
P1021 P2-38 ARE APERTURES (WINDOWS OR IRISES) USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0	0	0	0
P1022 P2-39 ARE DONUT REMEMBER THE KIND OF ENERGY COUPLING USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0	0	0	0
P1023 P2-40 DO YOU DETERMINE WHERE PROBES SHOULD BE MOUNTED IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA	0	0	0	0	0	0	0
P1024 P2-41 DO YOU DETERMINE THE POSITIONING OF LOOPS IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA	0	0	0	0	0	0	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

BY-TASK	SPC 026	SPC 027	SPC 028	SPC 029	SPC 030	SPC 031	SPC 032
P1025 P2-42 DO YOU DETERMINE THE POSITIONING OR SIZE OF APERTURES IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA	0	0	0	0	0	0	0
P1026 P2-43 ARE CHOKE JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0	0	0	0
P1027 P2-44 ARE ROTATING JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0	0	0	0
P1028 P2-45 ARE DON'T REMEMBER THE KIND OF JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0	0	0	0
P1029 P2-46 DO YOU TUNE CAVITY RESONATORS USING CAPACITIVE TUNING	0	0	0	0	0	0	0
P1030 P2-47 DO YOU TUNE CAVITY RESONATORS USING INDUCTIVE TUNING	0	0	0	0	0	0	0
P1031 P2-48 DO YOU TUNE CAVITY RESONATORS USING VOLUME TUNING	0	0	0	0	0	0	0
P1032 P2-49 DO YOU TUNE CAVITY RESONATORS USING DON'T REMEMBER THE METHOD OF TUNING	0	0	0	0	0	0	0
P1033 P2-50 DO YOU MEASURE THE FREQUENCY OF SIGNALS IN CAVITY RESONATORS	0	0	0	0	0	0	0
P1034 P3-01 IN YOUR PRESENT JOB DO YOU WORK WITH KLYSTRONS, TRAVELING WAVE TUBES (TWT), PARAMETRIC AMPLIFIERS, OR MAGNETRONS	0	0	0	0	0	0	0
P1035 P3-02 DO YOU USE OR REFER TO INTERELECTRODE CAPACITANCE	0	0	0	0	0	0	0
P1036 P3-03 DO YOU USE OR REFER TO ELECTRON TRANSIT TIME	0	0	0	0	0	0	0
P1037 P3-04 DO YOU USE OR REFER TO LEAD INDUCTANCE	0	0	0	0	0	0	0
P1038 P3-05 DO YOU USE OR REFER TO RF LOSSES IN EXTERNAL CIRCUITRY	0	0	0	0	0	0	0
P1039 P3-06 DO YOU USE OR REFER TO PRINCIPLE OF ELECTRON VELOCITY MODULATION	0	0	0	0	0	0	0
P1040 P3-07 DO YOU USE OR REFER TO ELECTRON BUNCHING	0	0	0	0	0	0	0
P1041 P3-08 DO YOU WORK WITH TWO-CAVITY KLYSTRONS	0	0	0	0	0	0	0
P1042 P3-09 DO YOU WORK WITH THREE-CAVITY KLYSTRONS	0	0	0	0	0	0	0
P1043 P3-10 DO YOU WORK WITH REFLEX KLYSTRONS	0	0	0	0	0	0	0
P1044 P3-11 DO YOU WORK WITH TRAVELING-WAVE TUBES (TWT)	0	0	0	0	0	0	0
P1045 P3-12 DO YOU WORK WITH NONDEGENERATIVE PARAMETRIC AMPLIFIERS	0	0	0	0	0	0	0
P1046 P3-13 DO YOU WORK WITH UP-CONVERTER PARAMETRIC AMPLIFIERS	0	0	0	0	0	0	0
P1047 P3-14 DO YOU WORK WITH MAGNETRONS	0	0	0	0	0	0	0
P1048 P3-15 DO YOU INSPECT KLYSTRONS OR TWT	0	0	0	0	0	0	0
P1049 P3-16 DO YOU CLEAN KLYSTRONS OR TWT	0	0	0	0	0	0	0
P1050 P3-17 DO YOU TUNE KLYSTRONS OR TWT ELECTRICALLY	0	0	0	0	0	0	0
P1051 P3-18 DO YOU TUNE KLYSTRONS OR TWT MECHANICALLY	0	0	0	0	0	0	0
P1052 P3-19 DO YOU PERFORM OPERATIONAL CHECKS OF KLYSTRONS OR TWT	0	0	0	0	0	0	0
P1053 P3-20 DO YOU TROUBLESHOOT KLYSTRONS OR TWT	0	0	0	0	0	0	0
P1054 P3-21 DO YOU REMOVE OR REPLACE COMPLETE KLYSTRON OR TWT	0	0	0	0	0	0	0
P1055 P3-22 DO YOU REMOVE OR REPLACE KLYSTRON OR TWT COMPONENTS	0	0	0	0	0	0	0
P1056 P3-23 DO YOU INSPECT PARAMETRIC AMPLIFIERS	0	0	0	0	0	0	0
P1057 P3-24 DO YOU CLEAN PARAMETRIC AMPLIFIERS	0	0	0	0	0	0	0
P1058 P3-25 DO YOU ADJUST PARAMETRIC AMPLIFIERS	0	0	0	0	0	0	0

MICROWAVE AMPLIFIERS AND OSCILLATORS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task ID	Description	026	027	028	029	030	031	032
P109	DO YOU TUNE PARAMETRIC AMPLIFIERS	0	0	0	0	0	0	0
P100	DO YOU PERFORM OPERATIONAL CHECKS OF PARAMETRIC AMPLIFIERS	0	0	0	0	0	0	0
P101	DO YOU TROUBLESHOOT PARAMETRIC AMPLIFIERS	0	0	0	0	0	0	0
P102	DO YOU REMOVE OR REPLACE COMPLETE PARAMETRIC AMPLIFIER	0	0	0	0	0	0	0
P103	DO YOU REMOVE OR REPLACE PARAMETRIC AMPLIFIER COMPONENTS	0	0	0	0	0	0	0
P104	DO YOU INSPECT MAGNETRONS	0	0	0	0	0	0	0
P105	DO YOU CLEAN MAGNETRONS	0	0	0	0	0	0	0
P106	DO YOU ADJUST MAGNETRONS	0	0	0	0	0	0	0
P107	DO YOU TUNE MAGNETRONS	0	0	0	0	0	0	0
P108	DO YOU PERFORM OPERATIONAL CHECKS OF MAGNETRONS	0	0	0	0	0	0	0
P109	DO YOU TROUBLESHOOT MAGNETRONS	0	0	0	0	0	0	0
P100	DO YOU REMOVE OR REPLACE COMPLETE MAGNETRON	0	0	0	0	0	0	0
P101	DO YOU REMOVE OR REPLACE MAGNETRON COMPONENTS	0	0	0	0	0	0	0
P102	DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS COLLECTOR PLATES	0	0	0	0	0	0	0
P103	DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER CAVITIES	0	0	0	0	0	0	0
P104	DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER GRIDS	0	0	0	0	0	0	0
P105	DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS FEEDBACK LOOPS	0	0	0	0	0	0	0
P106	DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS DRIFT SPACES	0	0	0	0	0	0	0
P107	DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER GRIDS	0	0	0	0	0	0	0
P108	DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER CAVITIES	0	0	0	0	0	0	0
P109	DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CONTROL GRIDS	0	0	0	0	0	0	0
P100	DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATHODES	0	0	0	0	0	0	0
P101	DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON REFLECTOR (REFLECTOR) PLATES	0	0	0	0	0	0	0
P102	DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRIDS	0	0	0	0	0	0	0
P103	DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRID CAVITY GAPS	0	0	0	0	0	0	0
P104	DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON RESONANT CAVITIES	0	0	0	0	0	0	0
P105	DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON MAGNETIC COUPLING LOOPS	0	0	0	0	0	0	0
P106	DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON FILAMENTS	0	0	0	0	0	0	0
P107	DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON CATHODES	0	0	0	0	0	0	0

DY-TSK

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UY-TSK	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	026	027	028	029	030	031	032				
P1088 P3-55 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON OUTPUT LEADS	0	0	0	0	0	0	0	0	0	0	0
P1089 P3-56 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES FILAMENTS	0	0	0	0	0	0	0	0	0	0	0
P1090 P3-57 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES CATHODES	0	0	0	0	0	0	0	0	0	0	0
P1091 P3-58 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MODULATOR GRIDS	0	0	0	0	0	0	0	0	0	0	0
P1092 P3-59 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ANODES	0	0	0	0	0	0	0	0	0	0	0
P1093 P3-60 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES HELIXES	0	0	0	0	0	0	0	0	0	0	0
P1094 P3-61 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES COLLECTORS	0	0	0	0	0	0	0	0	0	0	0
P1095 P3-62 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MAGNETS	0	0	0	0	0	0	0	0	0	0	0
P1096 P3-63 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ATTENUATORS	0	0	0	0	0	0	0	0	0	0	0
P1097 P3-64 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE CIRCULATORS	0	0	0	0	0	0	0	0	0	0	0
P1098 P3-65 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER SIGNAL CAVITIES	0	0	0	0	0	0	0	0	0	0	0
P1099 P3-66 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER IDLER CAVITIES	0	0	0	0	0	0	0	0	0	0	0
P1100 P3-67 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER VARACTOR	0	0	0	0	0	0	0	0	0	0	0
P1101 P3-68 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE ISOLATORS	0	0	0	0	0	0	0	0	0	0	0
P1102 P3-69 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER REVERSE-BIAS BATTERIES	0	0	0	0	0	0	0	0	0	0	0
P1103 P3-70 DO YOU PERFORM TASKS ON ANODES	0	0	0	0	0	0	0	0	0	0	0
P1104 P3-71 DO YOU PERFORM TASKS ON ANODE COOLING PINS	0	0	0	0	0	0	0	0	0	0	0
P1105 P3-72 DO YOU PERFORM TASKS ON COUPLING LOOPS	0	0	0	0	0	0	0	0	0	0	0
P1106 P3-73 DO YOU PERFORM TASKS ON HEATER LEADS	0	0	0	0	0	0	0	0	0	0	0
P1107 P3-74 DO YOU PERFORM TASKS ON RESONANT CAVITIES	0	0	0	0	0	0	0	0	0	0	0
P1108 P3-75 DO YOU PERFORM TASKS ON CATHODES	0	0	0	0	0	0	0	0	0	0	0
P1109 P3-76 DO YOU PERFORM TASKS ON MAGNETS	0	0	0	0	0	0	0	0	0	0	0
Q1110 Q1-01 DO YOU USE OR REFER TO STORAGE REGISTERS	82	92	80	100	97	100	58				
Q1111 Q1-02 DO YOU USE OR REFER TO SHIFT REGISTERS	84	77	85	100	84	100	79				
Q1112 Q1-03 DO YOU USE OR REFER TO LOGIC SYMBOLS OF SHIFT REGISTERS	81	69	84	33	84	100	79				
Q1113 Q1-04 DO YOU USE OR REFER TO LOGIC SYMBOLS OF STORAGE REGISTERS	78	69	80	33	90	100	63				
Q1114 Q1-05 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	79	69	82	67	84	100	71				
Q1115 Q1-06 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF REGISTERS	71	69	71	67	90	33	50				

REGISTERS

PCT MBS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

SPC SPC SPC SPC SPC SPC SPC SPC SPC SPC

026 027 028 029 030 031 032

72 77 71 100 81 100 50

Q110 Q1-07 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES HAVE PASSED

81 92 78 100 87 100 75

Q117 Q2-01 DO YOU WORK WITH DIGITAL COUNTERS, REGISTERS, OR STORAGE DEVICES IN YOUR PRESENT JOB

46 38 47 0 45 57 54

Q118 Q2-02 DO YOU USE OR REFER TO DELAY LINES

82 85 82 47 90 100 75

Q119 Q2-03 DO YOU USE OR REFER TO MAGNETIC CORES

24 8 27 0 48 0 0

Q120 Q2-04 DO YOU USE OR REFER TO MAGNETIC DRUMS

40 15 45 33 74 0 0

Q121 Q2-05 DO YOU USE OR REFER TO MAGNETIC TAPES

53 54 53 33 71 67 29

Q122 Q2-06 DO YOU USE OR REFER TO ACCESS TIME OR SPEED OR MEMORY SYSTEMS

75 92 71 100 97 67 46

Q123 Q2-07 DO YOU USE OR REFER TO WORD CAPACITY OF MEMORY SYSTEMS

35 38 35 33 52 33 21

Q124 Q2-08 DO YOU USE OR REFER TO VOLATILITY OF MEMORY SYSTEMS

43 31 45 0 45 33 50

Q125 Q2-09 DO YOU USE OR REFER TO LOGIC SYMBOL OF DELAY LINES

29 38 27 33 42 0 17

Q126 Q3-01 IN YOUR PRESENT JOB, DO YOU WORK WITH DIGITAL-TO-ANALOG (D/A) CONVERTERS, ANALOG-TO-DIGITAL (A/D) CONVERTERS, OR BINARY-TO-DECIMAL READOUT CONVERTERS

12 23 9 0 16 0 4

Q127 Q3-02 DO YOU COMPUTE OUTPUT VOLTAGES FOR ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT VOLTAGES

7 8 7 0 13 0 0

Q128 Q3-03 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE COUNT IN ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS IS DETERMINED BY ADDING THE DENOMINATORS OF THE RESISTORS

12 15 11 0 19 0 4

Q129 Q3-04 DO YOU COMPUTE ANALOG VOLTAGES FOR GIVEN BINARY COUNTS IN ELECTRONIC DIGITAL-TO-ANALOG (D/A) CONVERTERS

12 15 11 0 16 0 8

Q130 Q3-05 DO YOU PERFORM SAMPLE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS

10 15 9 0 16 0 4

Q131 Q3-06 DO YOU PERFORM HOLD FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS

13 15 13 0 19 0 8

Q132 Q3-07 DO YOU PERFORM COMPARE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS

9 15 7 0 10 0 8

Q133 Q3-08 DO YOU PERFORM DIGITIZE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS

10 15 9 0 23 0 0

Q134 Q3-09 DO YOU PERFORM DON'T REMEMBER WHICH FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS

6 15 4 0 6 0 4

Q135 Q3-10 DO YOU USE OR REFER TO SAMPLE FUNCTION OF A/D CONVERTERS

6 15 4 0 6 0 4

Q136 Q3-11 DO YOU USE OR REFER TO HOLD FUNCTION OF A/D CONVERTERS

7 15 5 0 10 0 4

Q137 Q3-12 DO YOU USE OR REFER TO COMPARE FUNCTION OF A/D CONVERTERS

6 15 4 0 6 0 4

Q138 Q3-13 DO YOU USE OR REFER TO DIGITAL FUNCTION OF A/D CONVERTERS

6 8 5 0 13 0 0

Q139 Q3-14 DO YOU PERFORM ANY TASKS ON MECHANICAL ANALOG-TO-DIGITAL (A/D) CONVERTERS

STORAGE DEVICES

DIGITAL TO ANALOG CONVERTERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DT-TSK	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	026	027	028	029	030	031	032				
R1190 R1-01 DO YOU WORK WITH PHANTASTRON CIRCUITRY IN YOUR PRESENT JOB	0	0	0	0	0	0	0	0	0	0	0
PHANTASTRONS											
R1191 R2-01 IN YOUR PRESENT JOB DO YOU WORK WITH SCHMITT TRIGGER CIRCUITS	63	54	65	67	71	100	50				
SCHMITT TRIGGERS											
R1192 R2-02 DO YOU TRACE DATA FLOW THROUGH SCHMITT TRIGER SCHEMATIC DIAGRAMS	60	54	62	67	65	100	50				
R1193 R2-03 DO YOU USE OR REFER TO SCHMITT TRIGGER LOGIC SYMBOLS	62	54	64	67	68	100	50				
R1194 R3-01 IN YOUR PRESENT JOB DO YOU FABRICATE MULTICONDUCTOR CABLES	29	15	33	0	23	67	46				
CABLE FABRICATION											
R1195 R3-02 DO YOU FABRICATE COAXIAL CABLES	13	0	16	0	10	0	25				
S1196 S1-01 IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS ON VISUAL READOUT SYSTEMS	63	77	60	33	65	100	67				
S1197 S1-02 DO YOU PERFORM ANY TASKS ON NIXIE LIGHTS OR NIXIE LIGHT DECODER SYSTEMS	16	23	15	0	29	0	8				
S1198 S1-03 DO YOU ANALYZE NIXIE LIGHT DECODER SYSTEMS USING BOOLEAN ALGEBRA	12	15	11	0	23	0	4				
PHOTO SENSITIVE DEVICES											
S1199 S2-01 DO YOU WORK WITH PHOTO TUBES IN YOUR PRESENT JOB	13	0	16	0	26	0	0				
S1200 S3-01 IN YOUR PRESENT JOB DO YOU WORK WITH CHOPPER CIRCUITS	0	0	0	0	0	0	0				
S1201 S3-02 DO YOU MEASURE EXCITATION FREQUENCIES	0	0	0	0	0	0	0				
S1202 S3-03 DO YOU MEASURE VOLTAGE-CURRENT PHASE RELATIONSHIPS	0	0	0	0	0	0	0				
S1203 S3-04 DO YOU USE OR REFER TO EXCITATION FREQUENCIES	0	0	0	0	0	0	0				
S1204 S3-05 DO YOU USE OR REFER TO VOLTAGE-CURRENT PHASE RELATIONSHIPS	0	0	0	0	0	0	0				
S1205 S3-06 DO YOU USE SERVOS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	0	0	0	0	0	0	0				
S1206 S3-07 DO YOU USE DETECTORS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	0	0	0	0	0	0	0				
S1207 S3-08 DO YOU USE ERROR SIGNAL DEVICES IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	0	0	0	0	0	0	0				
S1208 S3-09 DO YOU USE COMPARISON CIRCUITS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	0	0	0	0	0	0	0				
T1159 T1-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH INFRARED SYSTEMS	0	0	0	0	0	0	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	0	0				
T1164 T1-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF INFRARED SYSTEMS	0	0	0	0	0	0	0				
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				

INFRARED

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

TASK	SPC 026	SPC 027	SPC 028	SPC 029	SPC 030	SPC 031	SPC 032
1169 T1-11 00 YOU USE OR REFER TO FAR REGION	0	0	0	0	0	0	0
1170 T1-12 00 YOU USE OR REFER TO INTERMEDIATE REGION	0	0	0	0	0	0	0
1171 T1-13 00 YOU USE OR REFER TO NEAR REGION	0	0	0	0	0	0	0
1172 T1-14 00 YOU USE OR REFER TO MICROM	0	0	0	0	0	0	0
1173 T1-15 00 YOU USE OR REFER TO GRAY BODIES	0	0	0	0	0	0	0
1174 T1-16 00 YOU USE OR REFER TO BLACK BODIES	0	0	0	0	0	0	0
1175 T1-17 00 YOU USE OR REFER TO ABSORPTION	0	0	0	0	0	0	0
1176 T1-18 00 YOU USE OR REFER TO SCATTERING	0	0	0	0	0	0	0
1177 T1-19 00 YOU USE OR REFER TO ABSOLUTE ZERO	0	0	0	0	0	0	0
1178 T1-20 00 YOU PERFORM TASKS ON BLITZ	0	0	0	0	0	0	0
1179 T1-21 00 YOU PERFORM TASKS ON TARGET BUTTONS	0	0	0	0	0	0	0
1180 T1-22 00 YOU PERFORM TASKS ON ERECTOR LENSES	0	0	0	0	0	0	0
1181 T1-23 00 YOU PERFORM TASKS ON OCULAR LENSES	0	0	0	0	0	0	0
1182 T1-24 00 YOU PERFORM TASKS ON CORRECTION LENSES	0	0	0	0	0	0	0
1183 T1-25 00 YOU PERFORM TASKS ON FILTERS	0	0	0	0	0	0	0
1184 T1-26 00 YOU PERFORM TASKS ON SPHERICAL MIRRORS	0	0	0	0	0	0	0
1185 T1-27 00 YOU PERFORM TASKS ON PLANE MIRRORS	0	0	0	0	0	0	0
1186 T2-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH LASERS	0	0	0	0	0	0	0
1187 T2-02 00 YOU INSPECT LASER SYSTEMS	0	0	0	0	0	0	0
1188 T2-03 00 YOU CLEAN LASER SYSTEMS	0	0	0	0	0	0	0
1189 T2-04 00 YOU OPERATE LASER SYSTEMS	0	0	0	0	0	0	0
1190 T2-05 00 YOU OPERATE LASER SYSTEMS	0	0	0	0	0	0	0
1191 T2-06 00 YOU TROUBLESHOOT WIRE CONNECTIONS OF LASER SYSTEMS	0	0	0	0	0	0	0
1192 T2-07 00 YOU TROUBLESHOOT MAJOR ASSEMBLIES OF LASER SYSTEMS	0	0	0	0	0	0	0
1193 T2-08 00 YOU TROUBLESHOOT TO COMPONENT PARTS OF LASER SYSTEMS	0	0	0	0	0	0	0
1194 T2-09 00 YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF LASER SYSTEMS	0	0	0	0	0	0	0
1195 T2-10 00 YOU REMOVE OR REPLACE COMPONENT PARTS OF LASER SYSTEMS	0	0	0	0	0	0	0
1196 T2-11 00 YOU USE OR REFER TO ANGSTROMS (A)	0	0	0	0	0	0	0
1197 T2-12 00 YOU USE OR REFER TO ELECTRON ENERGY LEVELS	0	0	0	0	0	0	0
1198 T2-13 00 YOU USE OR REFER TO GROUND STATE	0	0	0	0	0	0	0
1199 T2-14 00 YOU USE OR REFER TO EXCITED STATE	0	0	0	0	0	0	0
1200 T2-15 00 YOU USE OR REFER TO PACKET OF RADIATION	0	0	0	0	0	0	0
1201 T2-16 00 YOU USE OR REFER TO PHOTONS	0	0	0	0	0	0	0
1202 T2-17 00 YOU USE OR REFER TO SPONTANEOUS EMISSION	0	0	0	0	0	0	0
1203 T2-18 00 YOU USE OR REFER TO STIMULATED EMISSION	0	0	0	0	0	0	0
1204 T2-19 00 YOU USE OR REFER TO COHERENCE OR INCOHERENCE	0	0	0	0	0	0	0
1205 T2-20 00 YOU USE OR REFER TO INVERSION LEVEL	0	0	0	0	0	0	0
1206 T2-21 00 YOU USE OR REFER TO MONOCHROMATIC	0	0	0	0	0	0	0
1207 T2-22 00 YOU WORK WITH ACTIVE MATERIALS	0	0	0	0	0	0	0
1208 T2-23 00 YOU WORK WITH PUMPING SOURCES	0	0	0	0	0	0	0
1209 T2-24 00 YOU WORK WITH FULL SILVERED (100% REFLECTIVE) MIRRORS	0	0	0	0	0	0	0

LASERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task ID	Description	SPC 026	SPC 027	SPC 028	SPC 029	SPC 030	SPC 031	SPC 032
T1210	DO YOU WORK WITH HALF SILVERED (928 REFLECTIVE) MIRRORS	0	0	0	0	0	0	0
T1211	DO YOU WORK WITH HELICAL FLASHTUBES	0	0	0	0	0	0	0
T1212	DO YOU WORK WITH RUBY	0	0	0	0	0	0	0
T1213	DO YOU WORK WITH HELIUM-NEON	0	0	0	0	0	0	0
T1214	DO YOU WORK WITH HELIUM-XENON	0	0	0	0	0	0	0
T1215	DO YOU WORK WITH XENON	0	0	0	0	0	0	0
T1216	DO YOU WORK WITH CESIUM-HELIUM	0	0	0	0	0	0	0
T1217	DO YOU WORK WITH ARGON	0	0	0	0	0	0	0
T1218	DO YOU WORK WITH NEODYMIUM IN GLASS	0	0	0	0	0	0	0
T1219	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 STORAGE TUBES (MMST)	3	0	4	0	0	6	0
T1221	T3-02 DO YOU INSPECT DVST OR MMST	0	0	0	0	0	0	0
T1222	T3-03 DO YOU CLEAN DVST OR MMST	0	0	0	0	0	0	0
T1223	T3-04 DO YOU ADJUST OR CALIBRATE DVST OR MMST	0	0	0	0	0	0	0
T1224	T3-05 DO YOU OPERATE SYSTEMS THAT CONTAIN DVST OR MMST	0	0	0	0	0	0	0
T1225	T3-06 DO YOU TROUBLESHOOT DVST OR MMST	0	0	0	0	0	0	0
CIRCUITS								
T1226	T3-07 DO YOU REMOVE OR REPLACE DVST OR MMST TUBES FROM MAJOR ASSEMBLIES OR UNITS	0	0	0	0	0	0	0
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	1	0	2	0	3	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	0	0	0
T1233	T3-14 DO YOU PERFORM TASKS ON STORAGE GRIDS	4	0	5	0	10	0	0
T1234	U1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY PROGRAMMING TASKS	79	62	84	0	84	100	83
T1235	U1-02 DO YOU USE OR REFER TO DECIMAL SYSTEMS	59	38	64	0	68	100	50
T1236	U1-03 DO YOU USE OR REFER TO PROGRAMS	68	46	73	0	81	100	58
T1237	U1-04 DO YOU USE OR REFER TO HEXIDECIMAL SYSTEMS	35	0	44	0	58	0	13
T1238	U1-05 DO YOU USE OR REFER TO 8-4-2-1 SYSTEMS	51	38	55	0	61	67	46
T1239	U1-06 DO YOU USE OR REFER TO FOUR SYSTEMS	12	23	9	0	23	0	4
T1240	U1-07 DO YOU USE OR REFER TO BINARY SYSTEMS	74	54	78	0	84	100	67
T1241	U1-08 DO YOU USE OR REFER TO TIME-SHARING	51	38	55	0	68	67	42
T1242	U1-09 DO YOU USE OR REFER TO DATA BONDS	63	38	69	0	84	0	50
T1243	U1-10 DO YOU USE OR REFER TO ADDRESS WORDS	74	62	76	0	87	100	67
T1244	U1-11 DO YOU USE OR REFER TO ADDRESS/SUBADDRESS	51	38	55	0	68	0	46
T1245	U1-12 DO YOU USE OR REFER TO STEERING/INFORMATION	40	23	44	0	55	0	25
T1246	U1-13 DO YOU USE OR REFER TO INFORMATION WORDS	62	46	65	0	74	100	46
T1247	U1-14 DO YOU PERFORM TASKS ON SINGLE LEVEL PROGRAMMING	47	38	49	0	52	33	46
T1248	U1-15 DO YOU PERFORM TASKS ON MULTI-LEVEL PROGRAMMING	31	31	31	0	45	33	17

DISPLAY TUBES

PROGRAMMING

PCT MBRs RESPONDING 'YES' BY SELECTED GRPS

GPSUM2 PAGE 04

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task	026	027	028	029	030	031	032
0Y-TSK							
U1249 U1-16 DO YOU PERFORM TASKS ON INPUT DEVICES	53	38	56	0	74	33	42
U1250 U1-17 DO YOU PERFORM TASKS ON STORAGE DEVICES	51	38	55	0	71	67	38
U1251 U1-18 DO YOU PERFORM TASKS ON ARITHMETIC SECTIONS	29	8	35	0	98	0	21
U1252 U1-19 DO YOU PERFORM TASKS ON CONTROL SECTIONS	43	23	47	0	58	0	38
U1253 U1-20 DO YOU PERFORM TASKS ON OUTPUT DEVICES	46	38	47	0	61	33	38
U1254 U1-21 DO YOU PERFORM TASKS ON POWER SUPPLIES	43	23	47	0	61	33	29
U1255 U2-01 DO YOU USE DECIBELS TO EXPRESS AMPLIFICATION AND ATTENUATION	43	38	44	0	45	33	54
U1256 U2-02 DO YOU USE LOGARITHMS TO COMPUTE OUTPUT POWER IN DECIBELS	6	15	4	0	10	33	0
U1257 U2-03 DO YOU USE LOGARITHMS TO COMPUTE ATTENUATION IN DECIBELS	6	15	4	0	10	33	0
U1258 U2-04 DUMMY TASK TO IDENTIFY INCUMBENTS WHO PERFORMED NO TASKS	1	0	2	0	0	0	0

DB AND POWER RATIOS

AD-A044 659

AIR FORCE OCCUPATIONAL MEASUREMENT CENTER LACKLAND A--ETC F/G 5/9
ELECTRICAL SWITCHING SYSTEMS REPAIRMAN AFSC 36252.(U)
SEP 77 T J O'CONNOR, E J WEBER

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)		
<p>This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned as Electrical Switching Systems Repairman (AFSC 36252). The report gives a detailed listing of the technical tasks and knowledge needed to perform the jobs within the specialty or career ladder.</p> <p style="text-align: right;">CONTINUED</p>		

This specialty has the following functions:

Maintains and repairs electronic switching systems equipment. Performs preventive maintenance routines at periodic intervals. Maintains, replaces and repairs electronic switching systems components. Maintains inspection and maintenance records. Supervises electronic switching systems repair personnel.

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