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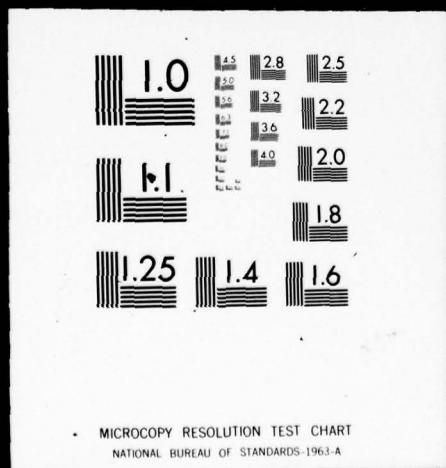


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OCCUPATIONAL SURVEY REPORT. ✓ ELECTRONIC PRINCIPLES

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TABLE OF CONTENTS

	<u>PAGE NUMBER</u>
PREFACE -----	2
INTRODUCTION -----	3
DEVELOPMENT OF THE ELECTRONIC PRINCIPLES INVENTORY (EPI) -----	3
ADMINISTRATION -----	3
PRESENTATION OF RESULTS -----	6
APPENDIX -----	7

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PREFACE

This report presents a summary of the results of a detailed Air Force Electronic Principles Survey of the Biomedical Equipment Maintenance Specialist, AFSC 40350.

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 John X. Olivo. 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
BIOMEDICAL EQUIPMENT MAINTENANCE SPECIALIST
AFSC 40350

INTRODUCTION

↘ This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned as Biomedical Equipment Maintenance Specialist (AFSC 40350). The data for this report were collected during the period July through September 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 40350 airmen worldwide. Responses from 104 individuals represented 48 percent of the total of all AFSC 40350 personnel. Table 2 shows the percentage distribution by major command of the survey incumbents.

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TABLE 1
EPI SUBJECT AREAS

<u>SEQUENCE OF SUBJECT AREAS</u>	<u>SUBJECT AREA TITLE</u>	<u>BEGINNING ITEM NUMBER</u>	<u>GPSUM PAGE NUMBER</u>
1	MATHEMATICS	A1	2
2	DIRECT CURRENT AND VOLTAGE	A15	2
3	RESISTANCE	A24	2
4	MULTIMETER USES	B52	3
5	ALTERNATING CURRENT	B61	4
6	INDUCTORS AND INDUCTIVE REACTANCE	B67	4
7	CAPACITORS AND CAPACITIVE REACTANCE	C92	5
8	TRANSFORMERS	C128	6
9	MAGNETISM	C171	7
10	RCL CIRCUITS	D185	8
11	SERIES AND PARALLEL RESONANCE (TIME CONSTANTS)	D229	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	PT034	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

<u>COMMAND</u>	40350	
	<u>PERCENT ASSIGNED</u>	<u>PERCENT OF SAMPLE</u>
ATC	18	19
MAC	16	17
SAC	14	14
TAC	13	7
AFSC	11	16
USAFE	9	6
PACAF	7	6
OTHER	<u>12</u>	<u>15</u>
TOTAL	100	100

Total Assigned - 215
 Total Sampled - 104
 Percent Sampled - 48

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 ten 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 (p. 11) and Relays (p. 12) to low in areas such as Lasers (p. 42) and Programming (p. 43). Additional AFSC 40350 data can be obtained upon request to the Chief, Occupational Survey Branch (OMY).

APPENDIX

TABULATION OF ELECTRONIC PRINCIPLES UTILIZATION DATA FOR SELECTED GROUPS
IN THE 403XD CAREER FIELD.

REPORTS ON THE FOLLOWING GROUPS WERE REQUESTED

GROUP IDENTITY = SPC001	ALL AIRMEN DAFSC 40350	STATIONED IN CONUS	CONTAINING	104 MEMBERS.
GROUP IDENTITY = SPC002	ALL AIRMEN DAFSC 40350	STATIONED OVERSEAS	CONTAINING	91 MEMBERS.
GROUP IDENTITY = SPC003	ALL AIRMEN DFASC 40350	ASSIGNED TO ATC	CONTAINING	13 MEMBERS.
GROUP IDENTITY = SPC004	ALL AIRMEN DFASC 40350	ASSIGNED TO MAC	CONTAINING	20 MEMBERS.
GROUP IDENTITY = SPC005	ALL AIRMEN DAFSC 40350	ASSIGNED TO PACAF	CONTAINING	18 MEMBERS.
GROUP IDENTITY = SPC006	ALL AIRMEN DAFSC 40350	ASSIGNED TO SAC	CONTAINING	6 MEMBERS.
GROUP IDENTITY = SPC007	ALL AIRMEN DAFSC 40350	ASSIGNED TO AFSC	CONTAINING	14 MEMBERS.
GROUP IDENTITY = SPC008	ALL AIRMEN DAFSC 40350	ASSIGNED TO TAC	CONTAINING	17 MEMBERS.
GROUP IDENTITY = SPC009	ALL AIRMEN DAFSC 40350	ASSIGNED TO USAFE	CONTAINING	7 MEMBERS.
GROUP IDENTITY = SPC010	ALL AIRMEN DAFSC 40350		CONTAINING	6 MEMBERS.

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

01-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	ALTERNATING CURRENT
B 61 B2-01 DO YOU USE OR REFER TO THE TERM EFFECTIVE VOLTAGE (RMS).	91	90	100	85	94	100	93	88	86	100	
B 62 B2-02 DO YOU USE OR REFER TO THE TERM PEAK TO PEAK VOLTAGE.	90	90	92	90	89	100	100	82	86	83	
B 63 B2-03 DO YOU USE OR REFER TO THE TERM AVERAGE VOLTAGE (DC).	85	82	100	85	89	100	79	76	57	100	
B 64 B2-04 DO YOU USE OR REFER TO THE TERM WAVE LENGTH.	81	79	92	85	69	100	93	71	43	83	
B 65 B2-05 DO YOU USE OR REFER TO THE TERM FREQUENCY.	94	93	100	95	94	100	100	82	100	100	
B 66 B2-06 DO YOU USE OR REFER TO THE TERM INSTANTANEOUS VALUE.	49	48	54	45	50	50	64	41	29	50	
B 67 B3-01 DO YOU WORK WITH INDUCTORS OR CIRCUITS CONTAINING INDUCTORS, CHOKES, OR CHOKE COILS IN YOUR PRESENT JOB.	79	79	77	80	78	83	86	71	71	67	
B 68 B3-02 DO YOU INSPECT INDUCTORS.	81	81	77	75	94	67	86	76	86	83	INDUCTORS AND INDUCTIVE REACTANCE
B 69 B3-03 DO YOU CLEAN INDUCTORS.	68	69	62	65	94	50	79	47	86	67	
B 70 B3-04 DO YOU ADJUST INDUCTORS.	77	76	85	70	94	83	93	59	86	83	
B 71 B3-05 DO YOU REMOVE OR REPLACE INDUCTORS.	81	80	85	70	89	83	93	76	86	83	
B 72 B3-06 DO YOU USE OR REFER TO INDUCTANCE.	81	81	77	85	83	83	86	71	86	67	
B 73 B3-07 DO YOU USE OR REFER TO HENRIES.	71	74	54	70	83	50	64	71	86	67	
B 74 B3-08 DO YOU USE OR REFER TO INDUCTIVE REACTANCE.	75	76	69	75	83	67	71	71	86	67	
B 75 B3-09 DO YOU USE OR REFER TO COPPER LOSS IN INDUCTORS.	22	24	8	15	17	0	29	12	43	17	
B 76 B3-10 DO YOU USE OR REFER TO HYSTERESIS LOSS IN INDUCTORS.	28	31	8	20	44	0	29	12	43	17	
B 77 B3-11 DO YOU USE OR REFER TO EDDY CURRENT LOSS IN INDUCTORS.	33	35	15	25	50	0	29	18	57	33	
B 78 B3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTANCE IS PROPORTIONAL TO THE SQUARE OF THE NUMBER OF TURNS OF THE COIL.	29	30	23	30	39	33	14	18	29	17	
B 79 B3-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE CROSS SECTIONAL AREA OF THE CORE.	22	23	15	25	28	17	14	6	29	17	
B 80 B3-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS INVERSELY PROPORTIONAL TO ITS LENGTH.	22	22	23	20	33	17	14	6	29	33	
B 81 B3-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE PERMEABILITY OF THE CORE MATERIAL.	28	30	15	25	39	17	21	16	43	17	
B 82 B3-16 DO YOU CALCULATE INDUCTANCE FOR PARTICULAR INDUCTORS USING FORMULAS.	28	27	31	20	22	33	29	24	29	33	
B 83 B3-17 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES.	31	34	8	30	33	17	29	29	43	0	
B 84 B3-18 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN PARALLEL.	31	34	8	30	33	17	29	29	43	0	
B 85 B3-19 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES-PARALLEL CIRCUITS.	32	34	15	30	33	17	29	29	43	17	
B 86 B3-20 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LAGS VOLTAGE IN AC INDUCTOR CIRCUITS.	55	54	62	55	67	83	50	47	57	33	
B 87 B3-21 DO YOU CALCULATE INDUCTIVE REACTANCE.	41	45	15	35	61	33	36	41	43	0	
B 88 B3-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTIVE REACTANCE IS DIRECTLY PROPORTIONAL TO FREQUENCY.	47	47	46	35	61	50	57	24	57	50	
B 89 B3-23 DO YOU WORK WITH POWER INDUCTORS.	61	60	62	65	61	83	64	59	43	50	
B 90 B3-24 DO YOU WORK WITH AUDIO FREQUENCY INDUCTORS.	68	68	69	65	78	83	86	59	43	67	
B 91 B3-25 DO YOU WORK WITH AUDIO FREQUENCY INDUCTORS.	62	59	77	55	67	83	71	59	43	83	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task Description	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	Capacitors and Capacitive Reactance
C 92 C1-01 DO YOU WORK WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS IN YOUR PRESENT JOB.	82	84	69	80	78	83	79	94	100	67	
C 93 C1-02 DO YOU INSPECT CAPACITORS.	97	99	85	100	94	67	100	100	100	100	
C 94 C1-03 DO YOU CLEAN CAPACITORS.	78	78	77	85	83	50	86	59	86	100	
C 95 C1-04 DO YOU ADJUST CAPACITORS.	88	87	92	90	89	83	93	82	86	100	
C 96 C1-05 DO YOU TEST CAPACITORS.	96	97	92	100	94	83	100	94	100	100	
C 97 C1-06 DO YOU DISCHARGE CAPACITORS.	96	97	92	95	100	83	100	100	86	100	
C 98 C1-07 DO YOU REMOVE OR REPLACE CAPACITORS.	99	99	100	100	100	100	100	100	100	100	
C 99 C1-08 DO YOU USE OR REFER TO DISTRIBUTED CAPACITANCE.	36	36	31	30	44	17	50	18	29	33	
C 100 C1-09 DO YOU USE OR REFER TO ORBITAL STRESS OF ELECTRONS IN A DIELECTRIC.	13	12	15	15	6	C	14	12	14	17	
C 101 C1-10 DO YOU USE OR REFER TO FARADS, MICROFARADS, OR PICOFARADS.	93	95	85	90	100	83	93	100	86	83	
C 102 C1-11 DO YOU USE OR REFER TO CAPACITANCE.	92	92	92	80	100	100	93	94	100	83	
C 103 C1-12 DO YOU USE OR REFER TO DIELECTRIC CONSTANT	28	27	31	25	33	17	43	6	29	33	
C 104 C1-13 DO YOU USE OR REFER TO WORKING VOLTAGE RATING OF CAPACITORS	84	85	77	75	100	83	79	88	86	67	
C 105 C1-14 DO YOU USE OR REFER TO CAPACITIVE REACTANCE	70	70	69	65	89	67	79	59	43	67	
C 106 C1-15 DO YOU USE OR REFER TO CAPACITOR COLOR CODES	55	57	38	45	61	33	64	53	71	33	
C 107 C1-16 DO YOU WORK WITH CAPACITORS IN DC CIRCUITS	96	96	100	100	89	100	93	94	100	100	
C 108 C1-17 DO YOU WORK WITH CAPACITORS IN AC CIRCUITS	98	98	100	100	100	100	100	100	86	100	
C 109 C1-18 DO YOU WORK WITH CAPACITORS IN CIRCUITS WITH BOTH DC AND AC CIRCUITS	95	95	100	100	94	100	93	88	66	100	
C 110 C1-19 DO YOU WORK WITH CAPACITORS IN DON'T REMEMBER WHICH CIRCUITS	13	12	23	20	11	17	29	6	0	33	
C 111 C1-20 DO YOU CALCULATE CAPACITANCE FOR PARTICULAR CAPACITORS USING FORMULAS	38	38	31	35	50	33	43	24	29	33	
C 112 C1-21 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS DIRECTLY PROPORTIONAL TO THE DIELECTRIC CONSTANT	21	22	15	20	28	C	36	6	14	33	
C 113 C1-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS INVERSELY PROPORTIONAL TO THE DIELECTRIC THICKNESS	22	23	15	25	28	0	36	6	14	33	
C 114 C1-23 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES	46	48	31	40	50	33	71	47	29	33	
C 115 C1-24 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN PARALLEL	48	51	31	40	56	33	71	47	29	33	
C 116 C1-25 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES-PARALLEL CIRCUITS	47	49	31	40	50	33	71	47	29	33	
C 117 C1-26 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT DOES NOT FLOW THROUGH CAPACITORS, IT ONLY APPEARS TO DO SO	59	62	38	60	72	33	79	47	57	33	
C 118 C1-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEADS VOLTAGE IN AC CAPACITOR CIRCUITS	58	59	46	55	89	50	71	47	29	33	
C 119 C1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITIVE REACTANCE IS INVERSELY PROPORTIONAL TO FREQUENCY	45	48	23	40	67	17	79	35	29	33	
C 120 C1-29 DO YOU CALCULATE CAPACITIVE REACTANCE	38	44	0	35	61	C	64	24	29	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC C10
C 121 C1-30 DO YOU WORK WITH ROTOR-STATOR (VARIABLE) CAPACITORS	81	79	92	80	72	83	86	86	71	100
C 122 C1-31 DO YOU WORK WITH COMPRESSION (TRIMMER) CAPACITORS	71	71	69	60	83	67	79	82	57	67
C 123 C1-32 DO YOU WORK WITH ELECTROLYTIC (FIXED) CAPACITORS	94	93	100	100	83	100	93	94	86	100
C 124 C1-33 DO YOU WORK WITH PAPER (FIXED) CAPACITORS	92	92	92	100	83	83	93	94	86	100
C 125 C1-34 DO YOU WORK WITH MICA (FIXED) CAPACITORS	88	88	92	95	83	83	93	88	71	100
C 126 C1-35 DO YOU WORK WITH CERAMIC (FIXED) CAPACITORS	91	91	92	95	89	83	93	94	86	100
C 127 C1-36 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF CAPACITORS	14	15	8	30	11	0	29	0	14	17
C 128 C2-01 DO YOU WORK WITH TRANSFORMERS IN YOUR PRESENT JOB	78	78	77	90	72	83	71	65	86	83
C 129 C2-02 DO YOU INSPECT TRANSFORMERS	93	95	85	100	89	67	86	94	100	100
C 130 C2-03 DO YOU CLEAN TRANSFORMERS	73	75	62	80	78	33	70	59	71	83
C 131 C2-04 DO YOU ADJUST TRANSFORMERS	72	75	54	80	78	67	79	76	57	50
C 132 C2-05 DO YOU TROUBLESHOOT TRANSFORMERS	92	93	85	100	94	83	86	88	86	83
C 133 C2-06 DO YOU REMOVE OR REPLACE COMPLETE TRANSFORMERS	93	92	100	85	94	100	66	94	100	100
C 134 C2-07 DO YOU REMOVE OR REPLACE TRANSFORMER PARTS, SUCH AS THE PRIMARY WINDING	16	18	8	20	17	0	21	6	0	17
C 135 C2-08 DO YOU MAKE A DISTINCTION BETWEEN MUTUAL INDUCTANCE AND MUTUAL INDUCTANCE (M)	19	21	8	25	17	0	29	12	14	17
C 136 C2-09 DO YOU USE THE SYMBOL FOR MUTUAL INDUCTANCE, M	18	20	8	20	22	0	21	12	14	17
C 137 C2-10 DO YOU REFER TO OR USE THE COEFFICIENT OF COUPLING WHEN WORKING WITH TRANSFORMERS	28	29	23	25	33	17	36	12	29	33
C 138 C2-11 DO YOU CALCULATE TURNS RATIOS FOR TRANSFORMERS USING CURRENT OR VOLTAGE RATIOS	45	45	46	55	61	67	50	29	29	33
C 139 C2-12 DO YOU REFER TO REFLECTED IMPEDANCE WHEN WORKING WITH TRANSFORMERS	27	30	8	25	50	17	36	18	14	0
C 140 C2-13 DO YOU CALCULATE IMPEDANCE INTERACTIONS FOR TRANSFORMERS	15	16	8	25	17	0	21	0	0	17
C 141 C2-14 DO YOU WORK WITH AUTOTRANSFORMERS	91	92	85	95	89	67	86	94	100	100
C 142 C2-15 DO YOU WORK WITH POWER TRANSFORMERS	91	91	92	95	89	83	86	88	100	100
C 143 C2-16 DO YOU WORK WITH AUDIO TRANSFORMERS	77	79	62	80	83	67	86	82	57	67
C 144 C2-17 DO YOU WORK WITH RADIO FREQUENCY TRANSFORMERS	70	70	69	75	67	83	79	71	57	67
C 145 C2-18 DO YOU WORK WITH DON'T REMEMBER WHAT TYPE OF TRANSFORMERS	10	10	8	35	6	0	7	0	0	17
C 146 C2-19 DO YOU CHECK TRANSFORMERS FOR OPEN WINDINGS BY MEASURING RESISTANCE	94	93	100	90	94	100	93	94	100	100
C 147 C2-20 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING RESISTANCE	86	86	85	85	72	67	93	88	100	100
C 148 C2-21 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING OUTPUT VOLTAGES	87	88	77	85	94	83	86	76	100	67
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	45	48	23	50	39	33	64	35	57	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	80	79	85	80	78	83	86	65	86	83
C 151 C2-24 DO YOU REFER TO BASIC TRANSFORMER SCHEMATIC SYMBOLS FOR TRANSFORMERS	92	92	92	90	94	83	93	94	86	100

TRANSFORMERS

PCT MBRS RESPONDING *YES* BY SELECTED GRPS

GPSUM1 PAGE 7

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DIY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010
C 152 C2-25 DO YOU REFER TO MULTIPLE SECONDARY-WINDINGS SCHEMATIC SYMBOLS FOR TRANSFORMERS	88	87	92	90	83	83	86	94	71	100
C 153 C2-26 DO YOU REFER TO MULTIPLE TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS	91	91	92	90	94	83	86	94	86	100
C 154 C2-27 DO YOU REFER TO CENTER TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS	92	92	92	90	94	83	93	94	86	100
C 155 C2-28 DO YOU REFER TO AIR CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS	71	70	77	80	78	50	86	53	57	100
C 156 C2-29 DO YOU REFER TO IRON CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS	72	71	77	80	83	50	86	53	57	100
C 157 C2-30 DO YOU REFER TO COMBINATIONS OF THE ABOVE SCHEMATIC SYMBOLS FOR TRANSFORMERS	80	82	62	85	94	50	86	76	66	67
C 158 C2-31 DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING SCHEMATIC SYMBOLS	61	63	46	75	67	33	57	65	43	50
C 159 C2-32 DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN TRANSFORMERS YOU WORK WITH	42	45	23	40	56	17	50	29	57	33
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	53	55	38	55	61	33	71	35	57	50
C 161 C2-34 DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN RATIOS USING TURNS RATIOS	72	74	62	80	83	50	79	71	57	67
C 162 C2-35 DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS USING TURNS RATIOS	47	47	46	55	56	0	57	24	57	83
C 163 C2-36 DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS USING TURNS RATIOS	38	38	31	50	39	0	43	18	57	50
C 164 C2-37 DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH THREE PHASE TRANSFORMERS	71	70	77	55	94	67	64	65	71	83
C 165 C2-38 DO YOU INSPECT THREE PHASE TRANSFORMERS	62	63	54	60	67	50	57	59	71	50
C 166 C2-39 DO YOU CLEAN OR LUBRICATE THREE PHASE TRANSFORMERS	42	42	46	35	56	50	43	29	43	33
C 167 C2-40 DO YOU ADJUST THREE PHASE TRANSFORMERS	36	36	31	25	39	17	43	35	43	33
C 168 C2-41 DO YOU TROUBLESHOOT THREE PHASE TRANSFORMERS	59	57	69	55	67	67	50	59	71	67
C 169 C2-42 DO YOU REMOVE OR REPLACE COMPLETE THREE PHASE TRANSFORMERS	49	48	54	55	56	67	43	59	29	33
C 170 C2-43 DO YOU REMOVE OR REPLACE THREE PHASE TRANSFORMER PARTS SUCH AS WINDINGS	20	22	8	25	28	0	21	6	43	0
C 171 C3-01 DO YOU USE OR REFER TO PERMANENT MAGNETS	72	73	69	60	94	67	86	65	86	67
C 172 C3-02 DO YOU USE OR REFER TO TEMPORARY MAGNETS	58	59	46	45	78	33	86	41	57	50
C 173 C3-03 DO YOU USE OR REFER TO RETENTIVITY OF MAGNETIC MATERIALS	35	35	31	40	39	17	36	24	14	33
C 174 C3-04 DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC MATERIALS	29	29	31	40	28	17	29	18	14	33
C 175 C3-05 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS	31	32	23	50	33	0	43	6	14	33
C 176 C3-06 DO YOU USE OR REFER TO RESIDUAL MAGNETISM	43	45	31	40	67	17	50	24	43	33
C 177 C3-07 DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE OR FLUX	50	51	46	50	72	50	36	41	57	33
C 178 C3-08 DO YOU USE OR REFER TO WEBER'S THEORY OF MAGNETISM	17	16	23	25	22	0	14	0	14	33

MAGNETISM

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010
C 179 C3-09 00 YOU USE OR REFER TO DOMAIN THEORY OF MAGNETISM	16	15	23	20	22	0	7	0	0	33
C 180 C3-10 00 YOU USE OR REFER TO MAGNETIC INDUCTION	48	48	46	55	56	33	64	24	43	50
C 181 C3-11 00 YOU USE OR REFER TO FLUX DENSITY	27	27	23	30	30	C	36	6	14	33
C 182 C3-12 00 YOU USE OR REFER TO THE GENERAL RULE THAT FOR MAGNETIC POLES, LIKE POLES REPEL AND UNLIKE POLES ATTRACT	68	69	62	60	83	50	79	59	100	67
C 183 C3-13 00 YOU USE THE LEFT HAND THUMB RULE TO FIND THE DIRECTION OF MAGNETIC FIELDS ABOUT STRAIGHT WIRES	38	37	46	35	50	33	36	24	14	67
C 184 C3-14 00 YOU USE THE LEFT HAND THUMB RULE TO FIND THE NORTH POLE OF A CURRENT CARRYING COIL	38	36	46	30	50	33	43	24	14	67
D 185 D1-01 00 YOU WORK WITH RC, LR, RCL CIRCUITS IN YOUR PRESENT JOB	63	66	38	65	87	50	57	71	71	33
D 186 D1-02 00 YOU USE OR REFER TO VECTORS WHEN WORKING WITH RCL CIRCUITS	35	34	38	35	39	33	21	35	29	50
D 187 D1-03 00 YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN WORKING WITH RCL CIRCUITS	25	27	8	30	33	17	21	18	14	0
D 188 D1-04 00 YOU USE OR REFER TO SINE WHEN WORKING WITH RCL CIRCUITS	25	26	15	20	44	0	21	16	0	33
D 189 D1-05 00 YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL CIRCUITS	27	29	15	25	44	0	21	24	0	33
D 190 D1-06 00 YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL CIRCUITS	25	26	15	25	44	0	14	18	0	33
D 191 D1-07 00 YOU USE OR REFER TO WATTS WHEN WORKING WITH RCL CIRCUITS	56	58	38	55	67	67	57	53	43	17
D 192 D1-08 00 YOU USE OR REFER TO TRUE POWER (PT) WHEN WORKING WITH RCL CIRCUITS	42	45	23	45	61	50	43	41	0	0
D 193 D1-09 00 YOU USE OR REFER TO MAXIMUM POWER (PM) WHEN WORKING WITH RCL CIRCUITS	40	43	23	45	44	50	43	47	0	0
D 194 D1-10 00 YOU USE OR REFER TO AVERAGE POWER (PAVE) WHEN WORKING WITH RCL CIRCUITS	38	40	23	45	39	50	36	47	0	0
D 195 D1-11 00 YOU USE OR REFER TO APPARENT POWER (PA) WHEN WORKING WITH RCL CIRCUITS	37	38	23	50	44	50	36	29	0	0
D 196 D1-12 00 YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING WITH RCL CIRCUITS	38	40	31	40	50	33	36	29	14	33
D 197 D1-13 00 YOU USE OR REFER TO RESONANT CIRCUITS WHEN WORKING WITH RCL CIRCUITS	58	60	38	60	67	50	57	59	57	33
D 198 D1-14 00 YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH RCL CIRCUITS	56	57	46	55	83	50	43	59	14	50
D 199 D1-15 00 YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH RCL CIRCUITS	50	52	38	50	72	50	50	47	14	33
D 200 D1-16 00 YOU USE OR REFER TO RESONANT FREQUENCY WHEN WORKING WITH RCL CIRCUITS	63	63	62	60	72	67	64	71	43	67
D 201 D1-17 00 YOU USE OR REFER TO HALF POWER POINTS WHEN WORKING WITH RCL CIRCUITS	33	36	8	40	44	17	36	24	14	0
D 202 D1-18 00 YOU USE OR REFER TO BANDPASS REGION WHEN WORKING WITH RCL CIRCUITS	47	48	38	60	67	50	43	29	14	33
D 203 D1-19 00 YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH RCL CIRCUITS	37	40	15	50	50	17	36	24	14	17

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010
0 204 01-20 DO YOU USE OR REFER TO TANK CIRCUITS WHEN WORKING WITH RCL CIRCUITS	66	69	46	75	89	50	57	65	57	33
0 205 01-21 DO YOU DETERMINE VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS	23	24	15	25	39	0	21	24	0	33
0 206 01-22 DO YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS	28	30	15	40	28	0	21	24	14	33
0 207 01-23 DO YOU CALCULATE TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS	35	36	23	40	44	33	36	29	14	0
0 208 01-24 DO YOU CALCULATE PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS	23	25	8	35	28	0	7	12	29	17
0 209 01-25 DO YOU CALCULATE TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS	34	35	23	30	44	33	36	29	29	0
0 210 01-26 DO YOU CALCULATE IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS	21	23	8	25	28	0	14	18	29	17
0 211 01-27 DO YOU CALCULATE APPARENT POWER (PA) FOR SERIES RCL CIRCUITS	28	30	15	40	28	33	36	29	0	0
0 212 01-28 DO YOU CALCULATE TRUE POWER (PT) FOR SERIES RCL CIRCUITS	30	33	8	35	39	17	43	35	0	0
0 213 01-29 DO YOU CALCULATE POWER FACTORS (PF) FOR SERIES RCL CIRCUITS	25	26	15	30	28	17	21	29	0	17
0 214 01-30 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RCL CIRCUITS	36	37	23	35	44	17	43	35	14	17
0 215 01-31 DO YOU CALCULATE IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS	19	22	0	30	28	0	29	12	0	0
0 216 01-32 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING THE ASSUMED VOLTAGE METHOD	24	25	15	30	22	17	21	35	14	0
0 217 01-33 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING OHM'S LAW	36	37	23	45	39	33	36	35	14	17
0 218 01-34 DO YOU CHECK CAPACITORS USING OHMMETERS	70	71	62	80	89	67	64	71	57	67
0 219 01-35 DO YOU CHECK CAPACITORS USING SUBSTITUTION	61	60	62	70	72	67	57	71	29	50
0 220 01-36 DO YOU CHECK INDUCTORS USING OHMMETERS	63	62	69	65	78	67	64	65	43	67
0 221 01-37 DO YOU CHECK INDUCTORS USING SUBSTITUTION	54	56	38	65	72	33	43	65	29	33
0 222 01-38 DO YOU USE OR REFER TO THE GENERAL RULE THAT THETA = 0, PF = 1, AND PA = PT FOR RESONANT CIRCUITS	13	15	0	15	22	0	14	6	0	0
0 223 01-39 DO YOU CALCULATE RESONANT FREQUENCIES FOR RCL CIRCUITS	37	38	23	40	56	33	29	29	29	17
0 224 01-40 DO YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE RESONANT FREQUENCY FOR SERIES RCL CIRCUITS	38	40	31	30	78	17	21	24	29	33
0 225 01-41 DO YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT RESONANT FREQUENCY FOR PARALLEL RCL CIRCUITS	32	35	8	40	56	0	21	18	14	0
0 226 01-42 DO YOU USE OR REFER TO THE GENERAL RULE THAT HALF POWER POINTS ARE AT 70.7 PERCENT OF THE PEAK CURRENT VALUE	35	38	8	35	67	0	14	29	14	17
0 227 01-43 DO YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO Q	25	27	8	30	50	0	21	12	14	17
0 228 01-44 DO YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE, CAPACITANCE, OR INDUCTANCE WILL AFFECT CURRENT OR PHASE ANGLES FOR RCL CIRCUITS	32	34	15	35	50	17	14	24	20	17

PCT MBRs RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010	SPEAKERS
F 327 F2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH SPEAKERS	64	65	62	55	63	67	64	71	57	50	
F 328 F2-02 DO YOU INSPECT SPEAKERS	66	67	62	55	78	50	79	76	57	67	
F 329 F2-03 DO YOU CLEAN SPEAKERS	52	54	38	50	61	0	79	47	43	67	
F 330 F2-04 DO YOU OPERATE SPEAKERS	67	67	69	55	83	67	79	76	57	67	
F 331 F2-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT PARTS OF SPEAKERS	60	57	77	45	72	83	71	59	29	67	
F 332 F2-06 DO YOU TROUBLESHOOT DOWN TO SPEAKER PARTS	29	30	23	30	17	0	50	41	43	50	
F 333 F2-07 DO YOU REMOVE OR REPLACE COMPLETE SPEAKERS	67	66	77	55	72	83	79	76	57	67	
F 334 F2-08 DO YOU REMOVE OR REPLACE SPEAKER PARTS	18	18	23	20	6	0	36	18	29	50	
F 335 F2-09 DO YOU PERFORM ANY TASKS ON SPEAKER CONES	17	18	15	20	28	17	21	12	14	17	
F 336 F2-10 DO YOU PERFORM ANY TASKS ON SPEAKER SPIDERS	10	10	8	20	6	0	14	6	0	17	
F 337 F2-11 DO YOU PERFORM ANY TASKS ON SPEAKER FIELD COILS	13	14	8	20	11	0	14	12	14	17	
F 338 F2-12 DO YOU PERFORM ANY TASKS ON SPEAKER VOICE COILS	14	15	8	25	11	0	14	12	14	17	
F 339 F2-13 DO YOU PERFORM ANY TASKS ON SPEAKER PERMANENT MAGNETS	15	16	8	25	17	0	14	18	14	17	
F 340 F2-14 DO YOU PERFORM ANY TASKS ON SPEAKER ELECTROMAGNETS	13	13	8	25	11	0	14	12	14	17	
F 341 F2-15 DO YOU PERFORM ANY TASKS ON SPEAKER SOFT IRON CORES	12	12	8	25	6	0	14	15	0	17	
F 342 F3-01 DO YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB	91	93	77	95	100	83	93	88	100	67	
F 343 F3-02 DO YOU USE OSCILLOSCOPES TO PERFORM OPERATIONAL CHECKS	91	91	92	85	89	100	100	98	86	83	OSCILLOSCOPES
F 344 F3-03 DO YOU USE OSCILLOSCOPES TO PERFORM ALIGNMENTS OR ADJUSTMENTS	92	93	85	100	83	83	93	88	100	83	
F 345 F3-04 DO YOU USE OSCILLOSCOPES TO TROUBLESHOOT ELECTRONIC CIRCUITS	92	92	92	100	89	100	86	88	100	83	
F 346 F3-05 DO YOU USE OSCILLOSCOPES TO MEASURE FREQUENCY	87	87	85	90	89	93	93	82	86	83	
F 347 F3-06 DO YOU USE OSCILLOSCOPES TO MEASURE TIME	87	87	85	90	83	83	100	76	100	83	
F 348 F3-07 DO YOU USE OSCILLOSCOPES TO OBSERVE LISAJOUS PATTERNS	43	43	46	60	28	50	43	29	43	33	
F 349 F3-08 DO YOU USE OSCILLOSCOPES TO OBSERVE SIGNALS WHILE UTILIZING ATTENUATOR PROBES	88	89	77	80	89	100	100	88	66	50	
F 350 F3-09 DO YOU USE OSCILLOSCOPES TO MAKE FREQUENCY OR TIME MEASUREMENTS USING DELAY TIME MULTIPLIERS	55	54	62	65	44	67	64	47	43	50	
F 351 F3-10 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE	89	90	85	100	89	83	93	82	57	83	
F 352 F3-11 DO YOU USE OSCILLOSCOPES TO MEASURE OR OBSERVE SIGNALS AFTER FIRST ADJUSTING THE GAIN AND DC BAL CONTROLS	80	79	85	65	78	100	93	82	71	67	
F 353 F3-12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE	91	91	92	100	83	100	100	76	100	83	
G 354 G1-01 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT JOB	92	93	85	100	94	83	100	88	86	83	
G 355 G1-02 DO YOU INSPECT DIODES	92	93	85	100	89	83	100	94	86	83	SEMICONDUCTOR
G 356 G1-03 DO YOU REMOVE OR REPLACE DIODES	95	96	92	95	100	83	100	94	86	100	DIODES
G 357 G1-04 DO YOU CHECK DIODES USING AN INSTRUMENT	96	96	100	100	94	100	100	94	86	100	
G 358 G1-05 DO YOU USE ENERGY LEVEL DIAGRAMS IN YOUR WORK WITH DIODES	26	25	31	40	28	33	29	6	18	33	
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 IAS RESISTANCE	31	32	23	50	28	17	36	12	43	33	
G 360 G1-07 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR DIODES	36	36	31	50	33	17	43	12	71	50	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task ID	Description	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010
G 361	G1-08 DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES	84	85	77	95	100	83	79	76	86	67
G 362	G1-09 DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO OTHER ELECTRONIC COMPONENTS, SUCH AS RESISTORS, BASED ON THEIR PHYSICAL APPEARANCE	90	91	85	100	89	100	100	82	71	67
G 363	G1-10 DO YOU REFER TO OR DO YOU DETERMINE THE GENERAL EFFECTS OF DOPING ON CURRENT FLOW	33	35	15	55	33	0	43	18	14	33
G 364	G1-11 DO YOU USE OR REFER TO MEASUREMENTS OF FORWARD BIAS RESISTANCE	81	81	77	90	89	67	71	82	71	83
G 365	G1-12 DO YOU USE OR REFER TO DIODE COLOR CODING	47	47	46	55	56	33	43	35	57	50
G 366	G1-13 DO YOU USE OR REFER TO CENTRIFUGAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS	12	13	0	25	11	0	14	12	14	0
G 367	G1-14 DO YOU USE OR REFER TO CENTRIFUGAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS	13	14	0	25	17	0	14	12	14	0
G 368	G1-15 DO YOU USE OR REFER TO DIODE NUMBERING SYSTEM, SUCH AS IN 538	86	85	92	80	94	100	79	88	86	83
G 369	G1-16 DO YOU USE OR REFER TO KINETIC ENERGY OF AN ELECTRON MOVING IN ORBIT	14	15	8	30	22	0	7	12	0	17
G 370	G1-17 DO YOU USE OR REFER TO POTENTIAL ENERGY OF AN ELECTRON MOVING IN ORBIT	13	15	0	30	17	0	7	12	0	0
G 371	G1-18 DO YOU USE OR REFER TO MEASUREMENTS OF REVERSE BIAS RESISTANCE	72	73	69	90	67	67	50	76	66	67
G 372	G1-19 DO YOU USE OR REFER TO NUMBER OF ELECTRONS IN A PARTICULAR SHELL OR ORBIT	13	15	0	20	11	0	14	12	29	0
G 373	G1-20 DO YOU USE OR REFER TO PERMISSIBLE ENERGY LEVELS OF AN ORBITING ELECTRON	11	12	0	20	11	0	7	6	29	0
G 374	G1-21 DO YOU USE OR REFER TO FORBIDDEN ENERGY LEVELS OF AN ORBITING ELECTRON	9	10	0	20	11	0	7	6	14	0
G 375	G1-22 DO YOU USE OR REFER TO VALENCE ELECTRONS (THOSE IN THE OUTERMOST SHELL)	17	20	0	30	22	0	14	12	29	0
G 376	G1-23 DO YOU USE OR REFER TO ATOMIC NUMBER (TOTAL NUMBER OF ELECTRONS IN ATOM)	15	18	0	25	22	0	21	6	14	0
G 377	G1-24 DO YOU USE OR REFER TO SYMBOLS ON THE CATHODE WHICH INDICATE THE CATHODE END	90	90	92	100	94	100	79	94	71	83
G 378	G1-25 DO YOU NEED TO KNOW WHICH MATERIALS ARE USED IN THE CONSTRUCTION OF DIODES SUCH AS GERMANIUM OR SILICON	69	73	46	80	72	50	71	71	71	50
G 379	G1-26 DO YOU NEED TO KNOW THAT SEMICONDUCTORS HAVE NEGATIVE TEMPERATURE COEFFICIENTS OF RESISTANCE (AS TEMPERATURE INCREASES RESISTANCE DECREASES)	64	66	38	75	78	33	71	59	57	33
G 380	G1-27 DO YOU USE OR REFER TO PN JUNCTION DIODE CHARACTERISTIC CURVES, SUCH AS VOLTAGE - CURRENT CHARACTERISTIC CURVES (PERHAPS YOU DO THIS TO IDENTIFY POINTS OF STRUCTURAL BREAKDOWN OR OPERATING REGIONS)	35	34	38	40	33	50	43	24	14	33
G 381	G1-28 DO YOU DETERMINE WHETHER PN JUNCTION DIODES ARE FORWARD BIASED OR REVERSE BIASED WHEN YOU READ OR INTERPRET CIRCUIT DIAGRAMS	79	78	85	75	78	100	100	76	71	67
G 382	G1-29 DO YOU USE OR REFER TO VALENCE BAND IN SEMICONDUCTOR MATERIALS	19	20	15	25	22	0	21	6	29	33

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010
6 383 G1-30 DO YOU USE OR REFER TO FORBIDDEN BAND IN SEMICONDUCTOR MATERIALS	15	15	15	25	11	0	14	6	29	33
6 384 G1-31 DO YOU USE OR REFER TO CONDUCTION BAND IN SEMICONDUCTOR MATERIALS	21	22	15	30	28	0	14	6	29	33
6 385 G1-32 DO YOU USE OR REFER TO COVALENT BONDING IN SEMICONDUCTOR MATERIALS	20	21	15	25	28	0	21	6	29	33
6 386 G1-33 DO YOU USE OR REFER TO ELECTRON-HOLE PAIR CREATED IN SEMICONDUCTORS	19	21	8	35	22	0	21	6	29	17
6 387 G1-34 DO YOU USE OR REFER TO ELECTRON FLOW OR HOLE FLOW IN SEMICONDUCTORS	36	40	8	55	50	0	36	24	29	17
6 388 G1-35 DO YOU USE OR REFER TO DONOR IMPURITY IN SEMICONDUCTORS	17	20	0	25	28	0	7	6	29	0
6 389 G1-36 DO YOU USE OR REFER TO ACCEPTOR IMPURITY IN SEMICONDUCTORS	17	20	0	25	28	0	7	6	29	0
6 390 G1-37 DO YOU USE OR REFER TO P-TYPE SEMICONDUCTOR MATERIAL	59	64	23	70	67	33	64	53	71	17
6 391 G1-38 DO YOU USE OR REFER TO N-TYPE SEMICONDUCTOR MATERIAL	59	64	23	70	72	33	64	53	57	17
6 392 G1-39 DO YOU USE OR REFER TO MAJORITY CARRIERS IN SEMICONDUCTORS	31	34	8	45	44	0	14	18	29	17
6 393 G1-40 DO YOU USE OR REFER TO MINORITY CARRIERS IN SEMICONDUCTORS	30	33	8	45	39	0	14	16	29	17
6 394 G1-41 DO YOU USE OR REFER TO JUNCTION RECOMBINATION IN SEMICONDUCTORS	23	25	8	35	33	0	14	16	14	17
6 395 G1-42 DO YOU USE OR REFER TO DEPLETION REGION IN SEMICONDUCTORS	29	31	15	40	44	17	14	18	29	17
6 396 G1-43 DO YOU USE OR REFER TO RELATIONSHIP BETWEEN BARRIER WIDTH AND DIFFERENCE OF POTENTIAL	27	30	8	40	39	17	14	18	29	0
6 397 G1-44 DO YOU USE OR REFER TO THE 10:1 BACK TO FRONT RESISTANCE RATIO FOR DIODES	51	56	15	65	56	17	57	53	29	17
6 398 G1-45 DO YOU USE OR REFER TO BARRIER HEIGHT IN SEMICONDUCTORS	17	20	0	25	22	0	21	12	0	0
6 399 G1-46 DO YOU USE OR REFER TO DIODE SUBSTITUTION INFORMATION	78	79	69	80	78	100	79	88	57	33
6 400 G1-47 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD CURRENT DIODE RATINGS	65	66	62	70	72	83	79	65	43	33
6 401 G1-48 DO YOU USE OR REFER TO PEAK RECURRENT FORWARD CURRENT DIODE RATINGS	59	58	62	65	67	83	64	59	29	33
6 402 G1-49 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT DIODE RATINGS	62	62	62	60	72	83	71	65	43	33
6 403 G1-50 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE DIODE RATINGS	63	64	62	70	61	93	79	65	43	33
6 404 G2-01 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB.	95	96	92	95	100	83	93	88	100	100
6 405 G2-02 DO YOU INSPECT TRANSISTORS	94	96	85	100	89	67	93	94	100	100
6 406 G2-03 DO YOU REMOVE OR REPLACE TRANSISTORS	98	98	100	100	100	100	93	94	100	100
6 407 G2-04 DO YOU CHECK TRANSISTORS USING AN INSTRUMENT	98	98	100	100	100	100	93	94	100	100
6 408 G2-05 DO YOU USE OR REFER TO EMITTER - BASE (EB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	96	97	92	100	94	100	93	94	100	93
6 409 G2-06 DO YOU USE OR REFER TO COLLECTOR - BASE (CB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	97	98	92	100	100	100	100	94	100	83

TRANSISTORS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task ID	Description	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010
G 410	G2-07 DO YOU USE OR REFER TO EMITTER - COLLECTOR (EC) RESISTANCE MEASUREMENTS	94	95	92	100	89	100	100	94	100	83
G 411	G2-08 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE EMITTER - BASE JUNCTION	59	59	54	65	61	50	57	47	57	50
G 412	G2-09 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE COLLECTOR - BASE JUNCTION	57	58	46	60	61	50	57	47	57	33
G 413	G2-10 DO YOU USE OR REFER TO THE PHYSICAL SIZE OF THE TRANSISTOR STRUCTURE (COLLECTOR, BASE AND EMITTER)	66	66	69	65	72	67	64	65	43	67
G 414	G2-11 DO YOU USE OR REFER TO LEAKAGE CURRENT (ICB0) IN A TRANSISTOR	59	62	38	60	89	33	57	41	57	33
G 415	G2-12 DO YOU USE OR REFER TO TRANSISTOR SCHEMATIC SYMBOLS	97	97	100	100	100	100	100	88	100	100
G 416	G2-13 DO YOU USE OR REFER TO TRANSISTOR NOTATION SUCH AS Q1, Q2, Q3, ETC	99	99	100	100	100	100	100	94	100	100
G 417	G2-14 DO YOU USE OR REFER TO TRANSISTOR SUBSTITUTION INFORMATION	93	92	100	85	100	100	100	94	86	100
G 418	G2-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE TRANSISTOR BASE CURRENT IB IS NORMALLY SIGNIFICANTLY SMALLER THAN THE EMITTER CURRENT IE (USUALLY IB BEING 2 TO 8 PERCENT OF IE)	64	63	77	60	61	67	86	53	57	83
G 419	G2-16 DO YOU USE THE INFORMATION THAT THE EFFECT OF EMITTER BASE VOLTAGE ON BASE CURRENT IS THE CONTROLLING FACTOR FOR TRANSISTORS	74	75	69	80	78	67	71	82	57	67
G 420	G2-17 DO YOU USE THE GENERAL RULE THAT LEAKAGE CURRENT (ICB0) IN A TRANSISTOR INCREASES AS TEMPERATURE INCREASES	54	56	38	55	83	17	57	35	29	50
G 421	G2-18 DO YOU USE OR REFER TO TRANSISTOR CHARACTERISTIC CURVES	41	42	38	55	50	50	50	18	14	17
G 422	G2-19 DO YOU USE OR REFER TO BETA TRANSISTOR GAINS	41	43	31	50	50	17	36	29	43	50
G 423	G2-20 DO YOU USE OR REFER TO ALPHA TRANSISTOR GAINS	38	40	31	45	50	17	36	24	29	50
G 424	G2-21 DO YOU USE OR REFER TO GAMMA TRANSISTOR GAINS	36	36	36	31	40	50	17	29	24	50
G 425	G2-22 DO YOU CALCULATE BETA TRANSISTOR GAINS	23	25	8	30	28	C	21	12	43	17
G 426	G2-23 DO YOU CALCULATE ALPHA TRANSISTOR GAINS	23	25	8	30	28	C	21	12	43	17
G 427	G2-24 DO YOU CALCULATE GAMMA TRANSISTOR GAINS	21	23	8	30	28	C	14	12	29	17
G 428	G3-01 DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR PRESENT JOB	87	88	77	95	94	67	79	82	66	83
G 429	G3-02 DO YOU INSPECT TRANSISTOR AMPLIFIERS	90	91	85	95	89	83	100	88	86	83
G 430	G3-03 DO YOU ALIGN OR ADJUST TRANSISTOR AMPLIFIERS	86	87	77	90	89	67	86	82	86	83
G 431	G3-04 DO YOU TROUBLESHOOT TO THE AMPLIFIER CIRCUIT LEVEL	90	89	100	95	89	100	86	88	66	100
G 432	G3-05 DO YOU TROUBLESHOOT TO AMPLIFIER COMPONENTS	90	89	100	95	89	100	93	82	86	100
G 433	G3-06 DO YOU REMOVE OR REPLACE THE COMPLETE AMPLIFIER	80	77	100	75	72	100	93	71	71	100
G 434	G3-07 DO YOU REMOVE OR REPLACE AMPLIFIER COMPONENTS	91	90	100	95	89	100	93	88	86	100
G 435	G3-08 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A CHANGE IN BASE CURRENT	63	66	38	70	67	33	79	59	57	33
G 436	G3-09 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A SPECIFIC CHANGE IN BASE CURRENT	40	42	31	40	39	33	57	41	43	17

TRANSISTOR
AMPLIFIERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DI-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010
6 437 G3-10 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A CHANGE IN BASE CURRENT	63	65	46	60	67	50	64	65	71	33
6 438 G3-11 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A SPECIFIC CHANGE IN BASE CURRENT	45	47	31	60	33	33	50	41	57	17
6 439 G3-12 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN BASE CURRENT WHICH RESULTS FROM AN INPUT SIGNAL	62	64	46	65	67	33	64	59	71	50
6 440 G3-13 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN BASE CURRENT WHICH RESULTS FROM A SPECIFIC INPUT SIGNAL	45	48	23	55	33	17	43	53	71	17
6 441 G3-14 DO YOU USE THE LOAD-LINE METHOD OF ANALYSIS IN YOUR CIRCUIT ANALYSIS (THIS METHOD REQUIRES YOU TO PLOT A LOAD-LINE ON A TRANSISTOR CHARACTERISTIC CURVE)	21	23	8	35	28	0	21	6	29	17
6 442 G3-15 DO YOU USE OR REFER TO THE OPERATING POINT Q (QUIESCENT POINT) FOR A TRANSISTOR	37	40	15	50	44	17	43	18	57	17
6 443 G3-16 DO YOU CALCULATE THE SPECIFIC QUIESCENT POINT FOR A PARTICULAR TRANSISTOR	20	23	0	30	28	0	21	12	14	0
6 444 G3-17 DO YOU MEASURE VOLTAGE GAIN USED IN THE COMMON EMITTER CONFIGURATION	66	67	62	85	72	93	64	47	71	33
6 445 G3-18 DO YOU MEASURE CURRENT GAIN USED IN THE COMMON EMITTER CONFIGURATION	57	56	62	70	56	67	57	41	57	50
6 446 G3-19 DO YOU MEASURE POWER GAIN USED IN THE COMMON EMITTER CONFIGURATION	57	56	62	70	56	67	57	41	43	50
6 447 G3-20 DO YOU CALCULATE THE VOLTAGE GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE IN BASE-EMITTER VOLTAGE INTO THE CHANGE IN COLLECTOR VOLTAGE TO DETERMINE THE VOLTAGE GAIN	29	32	8	35	28	0	50	24	29	17
6 448 G3-21 DO YOU CALCULATE THE CURRENT GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE IN BASE CURRENT INTO THE CHANGE IN COLLECTOR CURRENT TO DETERMINE THE CURRENT GAIN	30	33	8	40	28	0	50	24	29	17
6 449 G3-22 DO YOU CALCULATE THE POWER GAIN FOR A SPECIFIC TRANSISTOR USING A FORMULA THAT IS, DO YOU MULTIPLY THE CURRENT GAIN TIMES THE VOLTAGE GAIN TO DETERMINE THE POWER GAIN	25	29	0	30	33	0	36	18	29	0
6 450 G3-23 DO YOU NEED TO KNOW THAT MORE COLLECTOR CURRENT IS GENERATED WITH LESS COLLECTOR VOLTAGE AS TEMPERATURE INCREASES (THIS AFFECTS THE STATIC OPERATING POINT QJ OF THE TRANSISTOR)	36	40	8	45	56	0	29	35	29	17
6 451 G3-24 DO YOU COMPUTE THE STATIC OPERATING POINT QJ OF A TRANSISTOR AT DIFFERENT TEMPERATURES	18	21	0	30	17	0	21	12	14	0
6 452 G3-25 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH EMITTER (SWAMPING) RESISTOR STABILIZATION	60	59	62	70	61	50	50	53	71	67
6 453 G3-26 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH SELF-BIAS STABILIZATION	60	59	62	60	78	50	50	53	71	67

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task Description	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010
6 454 G3-27 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH THERMISTOR STABILIZATION	58	57	62	50	67	50	50	53	71	67
6 455 G3-28 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH FORWARD BIAS DIODE STABILIZATION	62	62	62	65	78	50	50	53	71	67
6 456 G3-29 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH REVERSE BIAS DIODE STABILIZATION	61	60	62	65	78	50	50	47	71	67
6 457 G3-30 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH DOUBLE DIODE STABILIZATION	56	55	62	50	78	50	50	47	57	67
6 458 G3-31 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM EMITTER (SWAMPING) RESISTOR STABILIZATION	62	60	69	65	61	67	57	59	71	67
6 459 G3-32 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM SELF-BIAS STABILIZATION	65	65	69	60	78	67	71	59	71	67
6 460 G3-33 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THERMISTOR STABILIZATION	62	60	69	50	67	67	64	59	71	67
6 461 G3-34 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM FORWARD BIAS DIODE STABILIZATION	63	63	69	65	78	67	57	53	71	67
6 462 G3-35 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM REVERSE BIAS DIODE STABILIZATION	63	63	69	65	78	67	57	53	71	67
6 463 G3-36 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM DOUBLE DIODE STABILIZATION	59	57	69	50	78	67	57	53	57	67
6 464 G3-37 DO YOU IDENTIFY AMPLITUDE DISTORTION FOR TRANSISTOR CIRCUITS	63	64	62	70	78	83	71	53	57	33
6 465 G3-38 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF AMPLITUDE DISTORTION	73	73	77	75	89	100	79	59	71	50
6 466 G3-39 DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS	66	66	69	75	67	83	71	59	71	50
6 467 G3-40 DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS	55	55	54	60	61	67	43	41	71	33
6 468 G3-41 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF PHASE DISTORTION	54	53	62	60	56	67	43	41	71	50
6 469 G3-42 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF FREQUENCY DISTORTION	65	65	69	70	67	83	71	59	71	50
6 470 G3-43 DO YOU NEED TO KNOW THE DEGENERATIVE EFFECTS ON THE CIRCUIT CAUSED BY CHANGING EMITTER RESISTANCE FOR TRANSISTOR AMPLIFIERS IN THE COMMON COLLECTOR CONFIGURATION	52	55	31	55	67	17	50	41	71	33
6 471 G3-44 DO YOU DETERMINE THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS	42	44	31	60	50	17	64	18	29	50
6 472 G3-45 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	45	44	54	50	33	33	64	41	29	67
6 473 G3-46 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	85	85	85	90	89	93	100	71	66	83
6 474 G3-47 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY CIRCUITS	55	53	69	50	61	67	50	53	57	67
6 475 G3-48 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	62	62	62	75	61	67	71	53	43	50

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

Task ID	Description	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010
G 476	G3-49 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	62	63	54	65	61	50	86	53	57	50
H 477	H1-01 DO YOU USE OR REFER TO VARACTORS	55	55	54	60	56	50	64	35	71	50
H 478	H1-02 DO YOU USE OR REFER TO TUNNEL DIODES	79	78	85	85	72	83	79	71	71	83
H 479	H1-03 DO YOU USE OR REFER TO FIELD EFFECT TRANSISTORS (FET)	88	88	85	95	83	83	86	88	86	93
H 480	H1-04 DO YOU USE OR REFER TO UNIJUNCTION TRANSISTORS	79	79	77	85	89	67	79	76	57	83
H 481	H1-05 DO YOU USE OR REFER TO ZENER DIODES	93	93	92	95	89	83	100	94	86	100
H 482	H1-06 DO YOU USE OR REFER TO INTEGRATED CIRCUITS	89	89	92	95	89	83	93	88	57	100
H 483	H2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH POWER SUPPLIES	88	89	77	85	94	83	100	76	66	67
H 484	H2-02 DO YOU INSPECT POWER SUPPLIES	92	93	85	95	89	67	100	82	100	100
H 485	H2-03 DO YOU CLEAN POWER SUPPLIES	80	82	62	80	89	33	100	65	66	83
H 486	H2-04 DO YOU ALIGN OR ADJUST POWER SUPPLIES	88	87	100	90	94	100	93	71	86	100
H 487	H2-05 DO YOU TROUBLESHOOT TO POWER SUPPLY CIRCUIT LEVEL	93	92	100	90	94	100	93	92	100	100
H 488	H2-06 DO YOU TROUBLESHOOT TO POWER SUPPLY COMPONENTS	94	93	100	95	94	100	93	92	100	100
H 489	H2-07 DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES	87	85	100	75	83	100	93	76	86	100
H 490	H2-08 DO YOU REMOVE OR REPLACE POWER SUPPLY COMPONENTS	94	93	100	95	94	100	93	82	100	100
H 491	H2-09 DO YOU WORK WITH HALF-WAVE RECTIFIERS	92	92	92	95	94	83	93	82	100	100
H 492	H2-10 DO YOU WORK WITH FULL-WAVE RECTIFIERS OTHER THAN BRIDGE RECTIFIERS	89	89	92	95	89	83	93	93	86	100
H 493	H2-11 DO YOU WORK WITH BRIDGE RECTIFIERS	94	93	100	95	94	100	100	82	100	100
H 494	H2-12 DO YOU WORK WITH THREE-PHASE RECTIFIERS	63	60	77	55	67	67	57	65	57	83
H 495	H2-13 DO YOU USE OR REFER TO INPUT VOLTAGE	90	90	92	95	83	83	100	82	86	100
H 496	H2-14 DO YOU USE OR REFER TO INPUT FREQUENCY	75	76	69	80	72	67	93	65	71	67
H 497	H2-15 DO YOU USE OR REFER TO PEAK OUTPUT VOLTAGE	78	78	77	90	78	83	93	65	57	67
H 498	H2-16 DO YOU USE OR REFER TO AVERAGE OUTPUT VOLTAGE	85	85	85	95	78	83	93	71	71	83
H 499	H2-17 DO YOU USE OR REFER TO RIPPLE AMPLITUDE	66	67	62	80	67	50	86	41	71	67
H 500	H2-18 DO YOU USE OR REFER TO RIPPLE FREQUENCY	63	63	62	65	72	50	79	35	71	67
H 501	H2-19 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE	58	57	62	55	61	67	79	35	57	50
H 502	H2-20 DO YOU USE OR REFER TO SHAPE OF OUTPUT WAVEFORMS	89	90	85	95	89	83	100	71	86	83
H 503	H2-21 DO YOU USE OR REFER TO EFFECTIVE OUTPUT VOLTAGE	84	84	85	85	89	83	100	76	57	83
H 504	H2-22 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE FILTERS	81	80	85	90	78	83	86	71	71	83
H 505	H2-23 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE FILTERS	74	75	69	85	72	67	79	71	57	67
H 506	H2-24 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE INPUT L-TYPE FILTERS	63	63	62	75	72	67	57	59	43	50
H 507	H2-25 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE INPUT L-TYPE FILTERS	64	65	62	75	78	67	64	59	57	50
H 508	H2-26 DO YOU WORK WITH CIRCUITS WHICH EMPLOY LC PI-TYPE FILTERS	63	63	62	80	67	67	71	53	43	50
H 509	H2-27 DO YOU WORK WITH CIRCUITS WHICH EMPLOY RC PI-TYPE FILTERS	67	67	69	85	67	83	71	59	57	50
H 510	H2-28 DO YOU WORK WITH CIRCUITS WHICH EMPLOY DON'T REMEMBER WHICH TYPE OF FILTER	29	27	38	25	28	17	43	18	29	50
H 511	H2-29 DO YOU HAVE THE OPTION OF REPLACING ONE TYPE OF FILTER WITH A DIFFERENT TYPE FILTER	29	29	31	40	33	17	21	16	29	33
H 512	H3-01 DO YOU WORK WITH OSCILLATORS IN YOUR PRESENT JOB	73	75	62	75	78	67	86	71	57	50

SOLID-STATE SPECIAL PURPOSE DEVICES

POWER SUPPLIES

OSCILLATORS

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DIAGNOSTIC	DESCRIPTION	001	002	003	004	005	006	007	008	009	010
H 513	H3-02 DO YOU INSPECT OSCILLATORS	77	80	54	80	83	50	93	76	71	50
H 514	H3-03 DO YOU ALIGN OR ADJUST OSCILLATORS	75	77	62	75	78	67	93	71	71	50
H 515	H3-04 DO YOU REMOVE OR REPLACE COMPLETE OSCILLATORS	69	70	62	70	78	67	71	71	57	50
H 516	H3-05 DO YOU REMOVE OR REPLACE OSCILLATOR COMPONENTS	76	77	69	80	79	93	86	76	57	50
H 517	H3-06 DO YOU TROUBLESHOOT TO OSCILLATOR CIRCUIT LEVEL	76	77	69	80	83	83	66	76	57	50
H 518	H3-07 DO YOU TROUBLESHOOT TO OSCILLATOR COMPONENTS	76	77	69	80	78	83	86	76	57	50
H 519	H3-08 DO YOU USE OR REFER TO FEEDBACK	76	78	62	80	83	93	71	57	33	33
H 520	H3-09 DO YOU USE OR REFER TO FREQUENCY DETERMINING DEVICES (FDD)	71	74	54	75	83	67	93	59	57	33
H 521	H3-10 DO YOU USE OR REFER TO AMPLITUDE STABILITY	65	67	54	65	72	67	79	53	71	33
H 522	H3-11 DO YOU USE OR REFER TO FREQUENCY STABILITY	67	69	54	65	78	67	86	53	71	33
H 523	H3-12 DO YOU USE OR REFER TO DAMPING	76	77	69	80	78	83	93	65	71	50
H 524	H3-13 DO YOU USE OR REFER TO REGENERATIVE FEEDBACK	74	76	62	80	83	93	93	65	57	33
H 525	H3-14 DO YOU USE OR REFER TO PIEZOELECTRIC EFFECT	54	56	38	55	67	33	79	41	43	33
H 526	H3-15 DO YOU USE OR REFER TO CRITICAL DAMPING	64	64	69	70	72	83	64	53	71	50
H 527	H3-16 DO YOU USE OR REFER TO UNDER DAMPING	74	75	69	80	83	83	79	65	71	50
H 528	H3-17 DO YOU USE OR REFER TO OVER DAMPING	74	75	69	80	83	83	79	65	71	50
H 529	H3-18 DO YOU WORK WITH OSCILLATORS WHICH USE LC TANK CIRCUITS AS FDD	64	65	62	80	56	67	86	53	43	50
H 530	H3-19 DO YOU WORK WITH OSCILLATORS WHICH USE RC NETWORKS AS FDD	71	73	62	80	78	67	86	65	57	50
H 531	H3-20 DO YOU WORK WITH OSCILLATORS WHICH USE CRYSTALS AS FDD	67	69	54	80	61	67	79	71	57	33
H 532	H3-21 DO YOU WORK WITH OSCILLATORS WHICH USE DON'T REMEMBER WHICH TYPE OF FDD	21	21	23	30	22	17	29	12	14	17
H 533	H3-22 DO YOU WORK WITH SERIES HARTLEY SINUSOIDAL OSCILLATORS	53	55	38	70	56	33	64	53	43	33
H 534	H3-23 DO YOU WORK WITH SHUNT HARTLEY SINUSOIDAL OSCILLATORS	57	59	38	70	61	33	71	53	57	33
H 535	H3-24 DO YOU WORK WITH COLPITTS SINUSOIDAL OSCILLATORS	53	56	31	55	56	17	71	53	57	33
H 536	H3-25 DO YOU WORK WITH CLAPP SINUSOIDAL OSCILLATORS	50	53	31	50	61	17	64	47	57	33
H 537	H3-26 DO YOU WORK WITH BUTLER SINUSOIDAL OSCILLATORS	48	51	31	55	33	17	64	53	57	33
H 538	H3-27 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF OSCILLATORS	30	30	31	25	28	33	50	29	14	17
I 539	I1-01 DO YOU WORK WITH MULTIVIBRATORS IN YOUR PRESENT JOB	65	69	38	75	78	50	71	71	71	17
I 540	I1-02 DO YOU INSPECT WAVE GENERATING OR SHAPING CIRCUITS	70	70	69	75	72	83	86	76	71	50
I 541	I1-03 DO YOU ALIGN OR ADJUST WAVE GENERATING OR SHAPING CIRCUITS	64	65	62	70	67	83	86	65	57	33
I 542	I1-04 DO YOU CALIBRATE WAVE GENERATING OR SHAPING CIRCUITS	64	64	69	70	72	83	79	59	57	50
I 543	I1-05 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUITS	67	67	69	70	78	83	86	71	57	50
I 544	I1-06 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUIT COMPONENTS	73	74	69	75	78	93	86	71	71	50
I 545	I1-07 DO YOU REMOVE OR REPLACE COMPLETE WAVE GENERATING OR SHAPING CIRCUITS	64	64	69	65	61	83	71	71	71	50
I 546	I1-08 DO YOU REMOVE OR REPLACE WAVE GENERATING OR SHAPING COMPONENTS	72	73	69	75	78	83	86	71	71	50
I 547	I1-09 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK CIRCUITS	67	68	62	75	67	67	71	71	57	50

MULTIVIBRATORS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DI-TASK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010
I 586 13-22 DO YOU CALCULATE ACTUAL VALUES OF TRIODE AMPLIFICATION FACTORS	25	27	8	35	17	0	29	16	43	17
I 587 13-23 DO YOU USE OR REFER TO MULTIGRID (TETRODE, PENTODE, ETC) AMPLIFICATION FACTORS	38	40	31	50	33	33	36	35	57	17
I 588 13-24 DO YOU USE OR REFER TO ELECTRON TUBE TRANSDUCTANCE (G, WHICH IS MEASURED IN MHOS)	22	24	8	30	22	0	29	12	29	17
I 589 13-25 DO YOU CALCULATE ACTUAL VALUES OF ELECTRON TUBE TRANSDUCTANCES	12	13	0	25	11	0	7	6	14	0
I 590 13-26 DO YOU USE OR REFER TO THE ELECTRON TUBE PARAMETER CALLED AC PLATE RESISTANCE	30	32	15	45	22	0	29	24	43	33
I 591 13-27 DO YOU CALCULATE ACTUAL VALUES OF AC PLATE RESISTANCE	18	20	8	40	11	0	7	18	14	17
I 592 13-28 DO YOU USE OR REFER TO ELECTRON TUBE INTERELECTRODE CAPACITANCE	34	35	23	50	33	17	21	29	43	17
I 593 13-29 DO YOU USE OR REFER TO CHARACTERISTIC CURVES IN YOUR WORK WITH ELECTRON TUBES	31	32	23	45	28	17	36	12	14	33
I 594 13-30 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE VOLTAGE FOR A SPECIFIED BIAS	34	35	23	45	22	0	43	12	43	33
I 595 13-31 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE CURRENT FOR A SPECIFIED BIAS	32	33	23	45	22	0	43	12	29	33
I 596 13-32 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR CUTOFF	37	38	23	45	28	0	57	16	29	33
I 597 13-33 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR SATURATION	36	40	8	40	28	0	50	24	43	17
I 598 13-34 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER GAIN	60	64	31	75	56	33	57	65	71	17
I 599 13-35 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER EFFICIENCY	37	37	31	50	33	17	43	24	14	33
I 600 13-36 DO YOU USE TEST TUBE CHECKERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	54	54	54	55	56	50	21	82	43	50
I 601 13-37 DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	69	69	69	70	67	83	57	76	71	50
I 602 13-38 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	77	78	69	95	78	83	64	76	86	50
I 603 13-39 DO YOU USE CHARACTERISTIC CURVES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	32	32	31	40	39	17	36	6	29	33
I 604 13-40 DO YOU CALCULATE ANY ELECTRON TUBE CAPACITANCES SUCH AS INPUT CAPACITANCE	14	15	8	25	17	0	7	12	14	0
I 605 13-41 DO YOU USE OR REFER TO TUBE SOCKET NOTATION	88	87	92	90	78	83	64	100	100	100
I 606 13-42 DO YOU USE OR REFER TO PIN NUMBERING SYSTEMS	88	88	92	95	78	83	64	100	100	100
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	23	24	15	40	17	0	14	18	29	17
I 608 13-44 DO YOU USE OR REFER TO TUBE SUBSTITUTION MATERIAL SUCH AS MANUALS OR CHARTS	81	81	77	85	78	67	64	94	71	83
J 609 JI-01 DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS IN YOUR PRESENT JOB	77	78	69	75	83	67	71	82	71	67
J 610 JI-02 DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS	44	45	38	45	61	33	57	29	29	33

ELECTRON TUBE
AMPLIFIERS
AND CIRCUITS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DIY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010
J 611 J1-03 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	43	44	38	50	33	33	50	53	29	33
J 612 J1-04 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	69	71	54	80	72	50	71	71	71	50
J 613 J1-05 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	50	49	54	55	50	50	50	59	29	50
J 614 J1-06 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	53	54	46	50	67	50	64	53	43	33
J 615 J1-07 DO YOU TROUBLESHOOT OR REPAIR DON'T KNOW WHICH TYPE OF AMPLIFIER	26	29	8	30	28	0	29	29	29	17
J 616 J2-01 DO YOU WORK WITH GAS TUBES (HOT CATHODE OR COLD CATHODE)	78	78	77	80	83	67	79	82	57	83
J 617 J2-02 DO YOU WORK WITH CATHODE-RAY TUBES	85	84	92	95	89	100	70	88	86	83
J 618 J2-03 DO YOU USE OR REFER TO THE CHARACTERISTICS OF BEAM POWER TUBES	29	30	23	30	28	17	43	24	14	17
J 619 J2-04 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH BEAM POWER TUBES ARE USED	37	37	31	35	44	33	50	35	29	17
J 620 J2-05 DO YOU USE OR REFER TO THE CHARACTERISTICS OF THYRATRONS	54	57	31	70	72	50	57	35	43	0
J 621 J2-06 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH THYRATRONS ARE USED	68	70	54	85	72	67	71	59	57	33
J 622 J2-07 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTRON GUNS OF CATHODE-RAY TUBES (CRT)	64	69	31	65	72	17	71	71	71	33
J 623 J2-08 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROMAGNETIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)	63	67	38	65	78	33	71	65	71	33
J 624 J2-09 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)	58	62	31	65	67	17	64	53	71	33
J 625 J2-10 DO YOU USE OR REFER TO PHOSPHOR SCREENS	67	70	46	70	72	33	71	76	71	50
J 626 J2-11 DO YOU USE OR REFER TO AQUADAG COATINGS	29	32	8	30	28	0	50	24	29	0
J 627 J2-12 DO YOU USE OR REFER TO ELECTRON OPTICS	30	31	23	35	11	17	57	18	43	17
J 628 J2-13 DO YOU USE OR REFER TO PERSISTENCE	39	43	15	40	44	17	64	41	29	0
J 629 J2-14 DO YOU USE OR REFER TO DECAY TIMES	46	49	23	50	50	17	64	41	43	17
J 630 J2-15 DO YOU USE OR REFER TO FLUORESCENCE	53	55	38	60	39	50	71	65	43	17
J 631 J2-16 DO YOU USE OR REFER TO PHOSPHORESCENCE	51	54	31	60	39	33	64	59	43	17
J 632 J3-01 DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	10	11	0	15	11	0	29	6	0	0
J 633 J3-02 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	11	12	0	15	11	0	36	6	0	0
J 634 J3-03 DO YOU PERFORM TASKS ON FREQUENCY MIXERS	10	11	0	15	11	0	36	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	7	8	0	5	11	0	21	6	0	0
J 636 J3-05 DO YOU PERFORM TASKS ON REACTANCE MODULATORS	6	7	0	5	11	0	21	0	0	0
J 637 J3-06 DO YOU PERFORM TASKS ON MODULATED OSCILLATORS	6	7	0	5	11	0	21	0	0	0
K 638 K1-01 DO YOU WORK ON AM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	5	5	0	5	6	0	14	6	0	0
K 639 K1-02 DO YOU INSPECT AM TRANSMIT OR RECEIVE SYSTEMS	3	3	0	5	0	0	14	0	0	0
K 640 K1-03 DO YOU CLEAN AM TRANSMIT OR RECEIVE SYSTEMS	4	4	0	5	6	0	14	0	0	0
K 641 K1-04 DO YOU ALIGN OR ADJUST AM TRANSMIT OR RECEIVE SYSTEMS	3	3	0	5	0	0	14	0	0	0

HETERODYNING,
MODULATION, AND
DEMODULATION

AM SYSTEMS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task ID	Description	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010
K 676	K2-11 DO YOU PERFORM TASKS ON DRIVERS (INTERMEDIATE AMPLIFIERS)	4	4	0	5	6	0	7	6	0	0
K 677	K2-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS	4	4	0	5	6	0	7	6	0	0
K 678	K2-13 DO YOU PERFORM TASKS ON RF AMPLIFIERS	4	4	0	5	6	0	7	6	0	0
K 679	K2-14 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	3	3	0	5	0	0	7	6	0	0
K 680	K2-15 DO YOU PERFORM TASKS ON IF AMPLIFIERS	3	3	0	5	6	0	7	0	0	0
K 681	K2-16 DO YOU PERFORM TASKS ON LIMITERS	3	3	0	5	6	0	7	0	0	0
K 682	K2-17 DO YOU PERFORM TASKS ON FREQUENCY DISCRIMINATORS	3	3	0	5	6	0	7	0	0	0
K 683	K2-18 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSMITTERS	4	4	0	5	6	0	7	6	0	0
K 684	K2-19 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM RECEIVERS	4	4	0	5	6	0	7	6	0	0
K 685	K3-01 DO YOU CONVERT DECIMAL (BASE 10) NUMBERS TO OCTAL (BASE 8) NUMBERS	18	21	0	25	17	0	29	12	14	0
K 686	K3-02 DO YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2) NUMBERS	32	35	8	30	39	0	50	24	29	17
K 687	K3-03 DO YOU CONVERT OCTAL NUMBERS TO DECIMAL NUMBERS	18	21	0	30	22	0	14	12	14	0
K 688	K3-04 DO YOU CONVERT OCTAL NUMBERS TO BINARY NUMBERS	18	21	0	30	22	0	14	12	14	0
K 689	K3-05 DO YOU CONVERT BINARY NUMBERS TO DECIMAL NUMBERS	29	32	8	35	44	0	29	24	14	17
K 690	K3-06 DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS	19	22	0	30	22	0	14	12	14	0
K 691	K3-07 DO YOU ADD BINARY NUMBERS TO GET A SUM	29	32	8	30	44	0	29	24	29	17
K 692	K3-08 DO YOU SUBTRACT BINARY NUMBERS USING THE END-AROUND-CARRY METHOD	21	23	8	20	28	0	14	24	14	17
K 693	K3-09 DO YOU SUBTRACT BINARY NUMBERS USING THE DIRECT SUBTRACTION METHOD	24	26	8	30	28	0	21	24	14	17
K 694	K3-10 DO YOU ADD OCTAL NUMBERS TO GET A SUM	20	22	8	30	22	0	21	12	14	17
L 695	L1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO LOGIC FUNCTIONS	56	62	15	65	67	17	50	71	43	17
L 696	L1-02 DO YOU CONSTRUCT TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES	35	38	8	50	33	0	29	41	14	17
L 697	L1-03 DO YOU CONSTRUCT TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES	35	38	8	50	33	0	29	41	14	17
L 698	L1-04 DO YOU CONSTRUCT TRUTH TABLES FOR AND OR LOGIC SYMBOLS WITH STATE INDICATORS	34	37	8	50	33	0	29	41	14	17
L 699	L1-05 DO YOU CONSTRUCT TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS OR GATES	30	33	8	40	33	0	29	35	14	17
L 700	L1-06 DO YOU USE OR REFER TO TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES	51	56	15	65	67	33	57	59	14	0
L 701	L1-07 DO YOU USE OR REFER TO TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES	51	56	15	65	67	33	57	59	14	0
L 702	L1-08 DO YOU USE OR REFER TO TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS	50	55	15	65	67	33	57	53	14	0
L 703	L1-09 DO YOU USE OR REFER TO TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS	50	55	15	65	61	33	64	47	29	0
L 704	L1-10 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR AND GATES	58	64	15	65	72	33	64	71	43	0
L 705	L1-11 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR OR GATES	55	60	15	65	67	33	57	71	43	0
L 706	L1-12 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR NAND OR NOR GATES	57	63	15	60	72	33	64	71	43	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DI-TASK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010
L 707 L1-13 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR EXCLUSIVE OR GATES	55	60	15	65	67	33	64	65	43	0
L 708 L2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO BOOLEAN EQUATIONS, LOGIC DIAGRAMS, OR LOGIC CIRCUITS	33	36	8	35	50	0	29	29	29	17
L 709 L2-02 DO YOU DRAW LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUITS	19	21	9	20	28	0	14	12	14	17
L 710 L2-03 DO YOU CONSTRUCT TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS	13	15	0	20	11	0	0	12	14	0
L 711 L2-04 DO YOU DRAW LOGIC DIAGRAMS FROM GIVEN BOOLEAN EQUATIONS	16	19	0	30	17	0	7	6	14	0
L 712 L2-05 DO YOU MEASURE INPUTS OR OUTPUTS OF LOGIC GATES	34	35	23	35	50	17	21	35	29	33
L 713 L2-06 DO YOU DEVELOP OR ANALYZE BOOLEAN EQUATIONS IN THE PROCESS OF TROUBLESHOOTING DIGITAL CIRCUITS	20	23	0	30	28	0	7	18	14	0
L 714 L2-07 DO YOU ANALYZE LOGIC CIRCUITS BY USING BOOLEAN ALGEBRA	18	21	0	30	22	0	7	12	14	0
L 715 L2-08 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUIT GATES	26	29	8	30	39	17	21	24	29	0
L 716 L2-09 DO YOU USE OR REFER TO TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS	18	20	8	25	22	17	7	12	14	0
L 717 L2-10 DO YOU USE OR REFER TO LOGIC DIAGRAMS CONSISTING OF MORE THAN ONE GATE	34	37	8	35	61	17	29	35	29	0
L 718 L2-11 DO YOU COMPUTE SUM AND CARRY EXPRESSIONS FOR SERIAL HALF OR FULL ADDER LOGIC DIAGRAMS	16	19	0	25	17	0	7	18	14	0
L 719 L2-12 DO YOU TRACE DATA FLOW THROUGH PARALLEL FULL ADDER LOGIC DIAGRAMS	15	18	0	20	17	0	7	18	14	0
L 720 L2-13 DO YOU WORK WITH ASTABLE (FREE RUNNING) MULTIVIBRATORS	39	42	23	35	61	17	43	35	29	33
L 721 L2-14 DO YOU WORK WITH BISTABLE (FLIP-FLOP) MULTIVIBRATORS	38	41	23	30	61	17	43	35	29	33
L 722 L2-15 DO YOU WORK WITH MONOSTABLE (ONE-SHOT) MULTIVIBRATORS	39	42	23	35	61	17	43	35	29	33
L 723 L2-16 DO YOU USE OR REFER TO FLIP-FLOP MULTIVIBRATOR SYMBOLS	38	42	15	35	61	17	43	35	29	17
L 724 L2-17 DO YOU USE OR REFER TO SINGLE-SHOT MULTIVIBRATOR SYMBOLS	38	41	15	35	56	17	43	35	29	17
L 725 L2-18 DO YOU USE OR REFER TO FLIP-FLOP CIRCUIT DIAGRAMS	38	42	15	35	61	17	43	35	29	17
L 726 L2-19 DO YOU USE OR REFER TO FLIP-FLOP TRUTH TABLES	31	33	15	30	44	17	36	24	14	17
L 727 L2-20 DO YOU USE OR REFER TO COMPLEMENTED FLIP-FLOP LOGIC SYMBOLS	35	37	15	35	44	17	43	29	29	17
L 728 L2-21 DO YOU USE OR REFER TO COMPLEMENTING FLIP-FLOP LOGIC SYMBOLS	35	37	15	35	44	17	43	29	29	17
L 729 L2-22 DO YOU MEASURE OUTPUT WAVESHAPES OF LOGIC CIRCUITS	37	38	23	35	50	17	36	35	29	33
L 730 L2-23 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTED FLIP-FLOP SCHEMATIC DIAGRAMS	29	31	15	30	33	17	21	35	14	17
L 731 L2-24 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTING FLIP-FLOP SCHEMATIC DIAGRAMS	29	31	15	35	33	17	21	29	14	17
L 732 L2-25 DO YOU CONSTRUCT TRUTH TABLES FOR J-K FLIP-FLOP LOGIC SYMBOLS	21	23	9	25	22	17	21	18	14	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010
M 761 M1-05 DO YOU WORK WITH BLOCKING OSCILLATORS	55	53	69	60	61	67	57	35	57	67
M 762 M1-06 DO YOU USE OR REFER TO RISE TIME	73	74	69	80	83	83	93	65	57	67
M 763 M1-07 DO YOU USE OR REFER TO FALL OR FLYBACK TIME	65	65	69	70	83	83	79	59	43	67
M 764 M1-08 DO YOU USE OR REFER TO SWEEP TIME	79	79	77	90	89	83	59	71	83	83
M 765 M1-09 DO YOU USE OR REFER TO ELECTRICAL LENGTH OF SAWTOOTH WAVEFORMS	70	71	62	85	83	83	79	53	57	50
M 766 M1-10 DO YOU USE OR REFER TO PHYSICAL LENGTH OF SAWTOOTH WAVEFORMS	62	64	46	80	72	50	71	47	29	50
M 767 M1-11 DO YOU USE OR REFER TO LINEAR SLOPE OF SAWTOOTH WAVEFORMS	62	62	62	70	61	67	79	53	57	67
M 768 M1-12 DO YOU USE OR REFER TO GATE LENGTH OF SAWTOOTH WAVEFORMS	55	55	54	55	67	50	71	53	29	67
M 769 M2-01 DO YOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB	69	73	46	85	72	50	86	76	43	33
M 770 M2-02 DO YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL GENERATORS	67	71	38	80	72	50	86	71	43	17
M 771 M2-03 DO YOU PERFORM PERIODIC MAINTENANCE SUCH AS ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL GENERATORS	59	62	38	75	67	33	71	59	29	33
M 772 M2-04 DO YOU TROUBLESHOOT TO AN ASSEMBLY OR SUBASSEMBLY WHILE USING SIGNAL GENERATORS	54	58	23	55	61	33	79	59	29	17
M 773 M2-05 DO YOU TROUBLESHOOT TO THE SMALLEST REPLACEABLE COMPONENT WHILE USING SIGNAL GENERATORS	54	57	31	50	67	33	79	53	43	17
M 774 M2-06 DO YOU USE AUDIO SINE-WAVE GENERATORS	53	55	38	65	50	50	71	59	14	33
M 775 M2-07 DO YOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH AS SQUARE WAVE, TRIANGLE, PULSE, OR SPIKE	51	54	31	55	61	50	86	41	29	17
M 776 M2-08 DO YOU USE RF GENERATORS LESS THAN 1,000 MH	34	35	23	40	44	50	43	29	14	0
M 777 M2-09 DO YOU USE RF GENERATORS GREATER THAN 1,000 MH	24	25	15	30	33	33	36	18	14	0
M 778 M2-10 DO YOU USE OTHER SPECIAL PURPOSE OR MULTI-FUNCTION GENERATORS	50	53	31	55	67	33	71	41	43	33
M 779 M3-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS OR GENERATORS	92	92	92	100	94	83	79	94	71	100
M 780 M3-02 DO YOU INSPECT MOTORS	92	92	92	100	89	83	86	94	71	100
M 781 M3-03 DO YOU CLEAN OR LUBRICATE MOTORS	93	93	92	100	94	83	86	94	71	100
M 782 M3-04 DO YOU OPERATE MOTORS	93	93	92	100	94	83	86	94	71	100
M 783 M3-05 DO YOU REMOVE OR REPLACE COMPLETE MOTORS	94	93	100	100	94	100	86	94	71	100
M 784 M3-06 DO YOU REMOVE OR REPLACE MOTOR PARTS	90	90	92	95	89	83	86	94	71	100
M 785 M3-07 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF MOTORS	94	93	100	100	94	100	86	94	71	100
M 786 M3-08 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS	88	88	92	95	83	100	86	88	71	83
M 787 M3-09 DO YOU PERFORM ANY TASKS ON FIELD COILS	69	68	77	60	56	67	79	82	71	83
M 788 M3-10 DO YOU PERFORM ANY TASKS ON ARMATURES	81	81	77	75	83	50	86	94	71	100
M 789 M3-11 DO YOU PERFORM ANY TASKS ON ROTORS	60	80	77	70	89	67	79	88	71	83
M 790 M3-12 DO YOU PERFORM ANY TASKS ON BRUSHES	93	93	92	100	94	83	86	94	71	100
M 791 M3-13 DO YOU PERFORM ANY TASKS ON SLIP RINGS	77	77	77	70	89	67	64	82	71	83
M 792 M3-14 DO YOU PERFORM ANY TASKS ON COMMUTATORS	80	81	69	80	89	50	71	82	71	83
M 793 M3-15 DO YOU PERFORM ANY TASKS ON POLE PIECES	67	67	69	70	56	67	71	71	71	67

MOTORS AND GENERATORS

USE OF SIGNAL GENERATORS

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

Task Description	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010
M 794 M3-16 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OF THE FORCE OR TORQUE CREATED BY A MOTOR	20	20	23	25	11	33	21	16	14	17
M 795 M3-17 DO YOU DETERMINE OR MEASURE THE DIRECTION OF THE MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR	34	32	46	35	22	33	36	29	29	50
M 796 M3-18 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OR DIRECTION OF THE INDUCED VOLTAGE IN MOTORS	22	23	15	30	11	17	29	18	14	17
M 797 M3-19 DO YOU WORK WITH SYNCHRONOUS MOTORS	76	75	85	90	78	67	64	76	71	100
M 798 M3-20 DO YOU WORK WITH INDUCTION MOTORS	77	75	92	80	72	83	71	82	71	100
M 799 M3-21 DO YOU WORK WITH SPLIT-PHASE MOTORS	59	56	77	65	56	67	57	59	43	83
M 800 M3-22 DO YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS	74	75	69	75	83	67	86	76	43	67
M 801 M3-23 DO YOU INSPECT GENERATORS	42	42	46	45	39	50	50	41	43	33
M 802 M3-24 DO YOU CLEAN OR LUBRICATE GENERATORS	42	43	38	45	39	33	50	35	29	33
M 803 M3-25 DO YOU OPERATE GENERATORS	44	45	38	45	39	33	57	41	43	33
M 804 M3-26 DO YOU REMOVE OR REPLACE COMPLETE GENERATORS	38	38	38	45	33	33	43	35	29	33
M 805 M3-27 DO YOU REMOVE OR REPLACE GENERATOR PARTS	39	40	38	45	33	33	43	35	29	33
M 806 M3-28 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF GENERATORS	39	40	38	45	39	33	43	35	29	33
M 807 M3-29 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF GENERATORS	37	37	31	40	33	33	43	35	29	17
N 808 N1-01 DO YOU WORK WITH METERS IN YOUR PRESENT JOB	88	88	85	95	89	83	86	94	71	83
N 809 N1-02 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF PERMANENT MAGNETS	48	51	31	70	61	33	50	24	43	33
N 810 N1-03 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF MOVING COILS	46	48	31	60	67	17	50	24	43	50
N 811 N1-04 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF SPIRAL SPRINGS	44	48	15	60	61	17	50	24	43	17
N 812 N1-05 DO YOU READ METER SCALES	93	92	100	95	89	100	86	100	86	100
N 813 N1-06 DO YOU EXTEND THE RANGE OF AMMETERS	53	53	54	70	50	33	50	53	57	67
N 814 N1-07 DO YOU ZERO OHMMETERS	94	93	100	95	94	100	86	100	86	100
N 815 N1-08 DO YOU ZERO AMMETERS	63	62	77	80	67	67	50	41	57	83
N 816 N1-09 DO YOU EXTEND THE RANGE OF VOLTMETERS	63	63	63	62	75	61	33	57	71	83
N 817 N1-10 DO YOU USE OR REFER TO VOLTMETER SENSITIVITY (EXPRESSED IN UNITS OF OHMS PER VOLT)	74	75	69	80	83	50	71	65	71	83
N 818 N2-01 DO YOU WORK WITH SATURABLE REACTORS OR MAGNETIC AMPLIFIERS IN YOUR PRESENT JOB	15	18	0	20	22	0	21	18	0	0
N 819 N2-02 DO YOU INSPECT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	15	18	0	20	22	0	21	18	0	0
N 820 N2-03 DO YOU CLEAN MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	13	14	0	20	22	0	7	12	0	0
N 821 N2-04 DO YOU ADJUST MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	13	15	0	20	22	0	7	18	0	0
N 822 N2-05 DO YOU TROUBLESHOOT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	16	19	0	20	22	0	21	24	0	0
N 823 N2-06 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	16	19	0	20	22	0	21	24	0	0
N 824 N2-07 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIER OR SATURABLE REACTOR COMPONENTS	13	15	0	20	17	0	14	18	0	0

SATURABLE REACTORS
AND MAGNETIC
AMPLIFIERS

METER MOVEMENTS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task ID	Description	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010
N 825	N2-08 DO YOU USE OR REFER TO HYSTERESIS CURVES OR LOOPS	10	11	0	20	11	0	7	6	0	0
N 826	N2-09 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE REACTORS	13	15	0	20	17	0	21	12	0	0
N 827	N2-10 DO YOU MEASURE OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE REACTORS	13	14	0	20	17	0	14	12	0	0
N 828	N2-11 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS FOR MAGNETIC AMPLIFIERS	7	8	0	20	6	0	0	6	0	0
N 829	N2-12 DO YOU USE OR REFER TO COERCIVE FORCE IN SATURABLE REACTORS	7	8	0	20	6	0	0	6	0	0
N 830	N2-13 DO YOU USE OR REFER TO RESIDUAL MAGNETISM IN SATURABLE REACTORS	9	10	0	20	6	0	14	6	0	0
N 831	N2-14 DO YOU USE OR REFER TO FLUX DENSITY IN SATURABLE REACTORS	8	9	0	20	11	0	0	6	0	0
N 832	N2-15 DO YOU USE OR REFER TO POINT OF SATURATION IN SATURABLE REACTORS	9	10	0	20	11	0	7	6	0	0
N 833	N2-16 DO YOU USE OR REFER TO SATURABLE REACTOR SCHEMATIC SYMBOLS	11	12	0	20	11	0	14	12	0	0
N 834	N3-01 DO YOU WORK WITH WAVESHAPING CIRCUITS IN YOUR PRESENT JOB	53	57	23	70	56	33	64	53	43	17
N 835	N3-02 DO YOU USE OR REFER TO TRANSIENT INTERVALS	47	49	31	60	56	50	57	35	29	17
N 836	N3-03 DO YOU USE OR REFER TO PULSE WIDTH (PW)	54	57	31	70	56	50	64	53	43	17
N 837	N3-04 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)	49	54	15	55	56	33	64	53	29	0
N 838	N3-05 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)	51	55	23	60	61	33	64	47	29	17
N 839	N3-06 DO YOU USE OR REFER TO DIFFERENTIATING CIRCUITS	51	54	31	70	50	50	57	53	43	17
N 840	N3-07 DO YOU USE OR REFER TO INTEGRATING CIRCUITS	50	54	23	65	50	33	64	47	43	17
N 841	N3-08 DO YOU USE OR REFER TO THE CLASSIFICATION OF TIME CONSTANTS (TC) AS LONG, MEDIUM, OR SHORT	43	46	23	60	50	33	50	29	29	17
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	36	37	23	55	33	33	50	12	29	17
N 843	N3-10 DO YOU WORK WITH SQUARE WAVE GENERATORS	60	63	38	70	61	67	79	53	43	17
N 844	N3-11 DO YOU WORK WITH RECTANGULAR WAVE GENERATORS	46	48	31	50	50	50	79	41	29	17
0 845	01-01 DO YOU WORK ON SINGLE SIDEBAND SYSTEMS IN YOUR PRESENT JOB	3	3	0	10	0	0	7	0	0	0
0 846	01-02 DO YOU INSPECT SSB TRANSMIT OR RECEIVE SYSTEMS	3	3	0	10	0	0	7	0	0	0
0 847	01-03 DO YOU CLEAN SSB TRANSMIT OR RECEIVE SYSTEMS	3	3	0	10	0	0	7	0	0	0
0 848	01-04 DO YOU ALIGN SSB TRANSMIT OR RECEIVE SYSTEMS	3	3	0	10	0	0	7	0	0	0
0 849	01-05 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE SYSTEMS	3	3	0	10	0	0	7	0	0	0
0 850	01-06 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE COMPONENTS	3	3	0	10	0	0	7	0	0	0
0 851	01-07 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE SYSTEMS	3	3	0	10	0	0	7	0	0	0
0 852	01-08 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE COMPONENTS	3	3	0	10	0	0	7	0	0	0

SINGLE SIDEBAND SYSTEMS

WAVESHAPING CIRCUITS

PCT MBS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DI-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010
0 853 01-09 00 YOU PERFORM TASKS ON SSB AUDIO AMPLIFIERS	3	3	0	10	0	0	7	0	0	0
0 854 01-10 00 YOU PERFORM TASKS ON SSB BALANCED MODULATORS	3	3	0	10	0	0	7	0	0	0
0 855 01-11 00 YOU PERFORM TASKS ON SSB CARRIER OSCILLATORS	2	2	0	10	0	0	0	0	0	0
0 856 01-12 00 YOU PERFORM TASKS ON SSB LC FILTERS	2	2	0	10	0	0	0	0	0	0
0 857 01-13 00 YOU PERFORM TASKS ON SSB CRYSTAL FILTERS	2	2	0	10	0	0	0	0	0	0
0 858 01-14 00 YOU PERFORM TASKS ON SSB MECHANICAL FILTERS	2	2	0	10	0	0	0	0	0	0
0 859 01-15 00 YOU PERFORM TASKS ON SSB OSCILLATORS	2	2	0	10	0	0	0	0	0	0
0 860 01-16 00 YOU PERFORM TASKS ON SSB MIXERS	2	2	0	10	0	0	0	0	0	0
0 861 01-17 00 YOU PERFORM TASKS ON SSB DRIVERS	2	2	0	10	0	0	0	0	0	0
0 862 01-18 00 YOU PERFORM TASKS ON SSB POWER AMPLIFIERS	2	2	0	10	0	0	0	0	0	0
0 863 01-19 00 YOU PERFORM TASKS ON SSB RF AMPLIFIERS	2	2	0	10	0	0	0	0	0	0
0 864 01-20 00 YOU PERFORM TASKS ON SSB FREQUENCY CONVERTERS	2	2	0	10	0	0	0	0	0	0
0 865 01-21 00 YOU PERFORM TASKS ON SSB IF AMPLIFIERS	2	2	0	10	0	0	0	0	0	0
0 866 01-22 00 YOU PERFORM TASKS ON SSB DEMODULATORS	2	2	0	10	0	0	0	0	0	0
0 867 01-23 00 YOU PERFORM TASKS ON SSB DON'T REMEMBER WHICH SSB SYSTEM STAGES	3	3	0	10	0	0	7	0	0	0
0 868 01-24 00 YOU USE OR REFER TO SELECTIVE FADING	3	3	0	10	0	0	7	0	0	0
0 869 01-25 00 YOU USE OR REFER TO PEAK POWER	3	3	0	10	0	0	7	0	0	0
0 870 01-26 00 YOU USE OR REFER TO FREQUENCY STABILITY	3	3	0	10	0	0	7	0	0	0
0 871 01-27 00 YOU USE OR REFER TO RESPONSE CURVES FOR BANDWIDTH FILTERS	3	3	0	10	0	0	7	0	0	0
0 872 01-28 00 YOU CALCULATE PEAK POWER OR EFFECTIVE POWER OF SSB TRANSMITTERS	3	3	0	10	0	0	7	0	0	0
0 873 01-29 00 YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB TRANSMITTER SCHEMATIC DIAGRAMS	3	3	0	10	0	0	7	0	0	0
0 874 01-30 00 YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB RECEIVER SCHEMATIC DIAGRAMS	3	3	0	10	0	0	7	0	0	0
0 875 02-01 00 YOU WORK ON PULSE MODULATION SYSTEMS IN YOUR PRESENT JOB	9	9	8	15	6	0	29	0	0	17
0 876 02-02 00 YOU INSPECT PULSE MODULATION SYSTEMS	9	9	8	15	6	0	29	0	0	17
0 877 02-03 00 YOU CLEAN PULSE MODULATION SYSTEMS	9	9	8	10	6	0	29	0	0	17
0 878 02-04 00 YOU ALIGN PULSE MODULATION SYSTEMS	8	8	8	10	6	0	29	0	0	17
0 879 02-05 00 YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS COMPONENTS	9	9	8	15	6	0	29	0	0	17
0 880 02-06 00 YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS COMPONENTS	9	9	8	15	6	0	29	0	0	17
0 881 02-07 00 YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS COMPONENTS	9	9	8	15	6	0	29	0	0	17
0 882 02-08 00 YOU REMOVE OR REPLACE PULSE MODULATION SYSTEM COMPONENTS	8	8	8	15	6	0	21	0	0	17
0 883 02-09 00 YOU WORK ON PULSE-AMPLITUDE MODULATION (PAM) SYSTEMS	8	8	8	15	6	0	21	0	0	17
0 884 02-10 00 YOU WORK ON PULSE-DURATION MODULATION (PDM) SYSTEMS	8	8	8	15	6	0	21	0	0	17
0 885 02-11 00 YOU WORK ON PULSE-POSITION MODULATION (PPH) SYSTEMS	7	7	8	10	6	0	21	0	0	17
0 886 02-12 00 YOU WORK ON PULSE-CODE MODULATION (PCM) SYSTEMS	5	4	8	10	6	0	7	0	0	17
0 887 02-13 00 YOU WORK ON LINE PULSING MODULATION SYSTEMS	7	7	8	10	6	0	21	0	0	17
0 888 02-14 00 YOU WORK ON DON'T REMEMBER WHICH TYPE OF MODULATION SYSTEM	6	5	8	10	6	0	14	0	0	17

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task Description	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010
0 889 02-15 00 YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER SUPPLIES	8	8	8	15	6	0	21	0	0	17
0 890 02-16 00 YOU PERFORM TASKS ON PULSE MODULATION SYSTEM CHARGING CHOKES AND CHARGING DIODES	7	7	8	10	6	0	21	0	0	17
0 891 02-17 00 YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE FORMING NETWORKS	8	8	8	15	6	0	21	0	0	17
0 892 02-18 00 YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TIMERS	8	8	8	15	6	0	21	0	0	17
0 893 02-19 00 YOU PERFORM TASKS ON PULSE MODULATION SYSTEM SWITCHES SUCH AS GAS THYRATRONS	7	8	0	15	0	0	29	0	0	0
0 894 02-20 00 YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE TRANSFORMERS	8	9	0	15	6	0	29	0	0	0
0 895 02-21 00 YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TRANSMITTER TUBES	4	3	8	10	0	0	7	0	0	17
0 896 02-22 00 YOU PERFORM TASKS ON PULSE MODULATION SYSTEM RF AMPLIFIERS	5	5	0	15	0	0	14	0	0	0
0 897 02-23 00 YOU PERFORM TASKS ON PULSE MODULATION SYSTEM FREQUENCY CONVERTERS	6	5	8	10	0	0	21	0	0	17
0 898 02-24 00 YOU PERFORM TASKS ON PULSE MODULATION SYSTEM IF AMPLIFIERS	5	4	8	15	0	0	7	0	0	17
0 899 02-25 00 YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DETECTORS	7	8	0	15	0	0	29	0	0	0
0 900 02-26 00 YOU PERFORM TASKS ON PULSE MODULATION SYSTEM VIDEO AMPLIFIERS	3	3	0	10	0	0	7	0	0	0
0 901 02-27 00 YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER VIDEO AMPLIFIERS	3	3	0	10	0	0	7	0	0	0
0 902 02-28 00 YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DON'T REMEMBER WHICH PULSE MODULATION SYSTEM STAGES	4	4	0	10	0	0	14	0	0	0
0 903 02-29 00 YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)	5	5	0	15	0	0	14	0	0	0
0 904 02-30 00 YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)	5	5	0	15	0	0	14	0	0	0
0 905 02-31 00 YOU USE OR REFER TO PULSE WIDTH (PW)	5	5	0	15	0	0	14	0	0	0
0 906 02-32 00 YOU USE OR REFER TO PULSE SHAPE	5	5	0	15	0	0	14	0	0	0
0 907 02-33 00 YOU USE OR REFER TO PEAK POWER	4	4	0	10	0	0	14	0	0	0
0 908 02-34 00 YOU USE OR REFER TO AVERAGE POWER	4	4	0	10	0	0	14	0	0	0
0 909 02-35 00 YOU CALCULATE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)	4	4	0	10	0	0	14	0	0	0
0 910 02-36 00 YOU MEASURE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)	5	5	0	15	0	0	14	0	0	0
0 911 02-37 00 YOU USE FORMULAS TO CALCULATE AVERAGE POWER OR PEAK POWER OF PULSE MODULATION TRANSMIT SYSTEMS	4	4	0	10	0	0	14	0	0	0
0 912 02-38 00 YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION TRANSMITTER SCHEMATIC DIAGRAMS	6	5	8	15	0	0	14	0	0	17
0 913 02-39 00 YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION RECEIVER SCHEMATIC DIAGRAMS	5	4	8	10	6	0	7	0	0	17
0 914 03-01 00 YOU WORK WITH ANTENNAS IN YOUR PRESENT JOB	5	5	0	5	0	0	14	6	0	0
0 915 03-02 00 YOU INSPECT ANTENNAS	5	5	0	5	0	0	14	6	0	0

ANTENNAS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task Description	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010
0 916 03-03 DO YOU CLEAN ANTENNAS	4	4	0	5	0	0	14	0	0	0
0 917 03-04 DO YOU PHYSICALLY ALIGN ANTENNAS	4	4	0	5	0	0	14	0	0	0
0 918 03-05 DO YOU ELECTRICALLY ALIGN ANTENNAS	3	3	0	5	0	0	14	0	0	0
0 919 03-06 DO YOU TROUBLESHOOT TO ANTENNAS	4	4	0	5	0	0	14	0	0	0
0 920 03-07 DO YOU TROUBLESHOOT TO ANTENNA COMPONENTS	4	4	0	5	0	0	14	0	0	0
0 921 03-08 DO YOU REMOVE OR INSTALL ANTENNAS	5	5	0	5	0	0	14	6	0	0
0 922 03-09 DO YOU REMOVE OR REPLACE COMPONENTS OF ANTENNAS	4	4	0	5	0	0	14	0	0	0
0 923 03-10 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF E OR ELECTRIC FIELD LINES	3	3	0	5	0	0	14	0	0	0
0 924 03-11 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF H OR MAGNETIC FIELD LINES	3	3	0	5	0	0	14	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	3	3	0	5	0	0	14	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	4	4	0	5	0	0	14	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	4	4	0	5	0	0	14	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	3	3	0	5	0	0	7	0	0	0
0 929 03-16 DO YOU WORK WITH HERTZ ANTENNAS	5	5	0	5	0	0	14	6	0	0
0 930 03-17 DO YOU WORK WITH MARCONI ANTENNAS	4	4	0	5	0	0	14	6	0	0
0 931 03-18 DO YOU WORK WITH BROADSIDE ARRAYS	2	2	0	5	0	0	7	0	0	0
0 932 03-19 DO YOU WORK WITH END-FIRE ARRAYS	2	2	0	5	0	0	7	0	0	0
0 933 03-20 DO YOU WORK WITH CARDIOID ARRAYS	2	2	0	5	0	0	7	0	0	0
0 934 03-21 DO YOU WORK WITH COLLINER ARRAYS	2	2	0	5	0	0	7	0	0	0
0 935 03-22 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC INDUCTION FIELDS WHEN WORKING WITH ANTENNAS	3	3	0	5	0	0	14	0	0	0
0 936 03-23 DO YOU MEASURE ELECTROMAGNETIC INDUCTION FIELDS OF ANTENNAS	3	3	0	5	0	0	14	0	0	0
0 937 03-24 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC RADIATION FIELDS WHEN WORKING WITH ANTENNAS	3	3	0	5	0	0	14	0	0	0
0 938 03-25 DO YOU MEASURE ELECTROMAGNETIC RADIATION FIELDS OF ANTENNAS	3	3	0	5	0	0	14	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	3	3	0	5	0	0	14	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	3	3	0	5	0	0	14	0	0	0
0 941 03-28 ARE ANY OF THE ANTENNAS YOU WORK ON LINEARLY POLARIZED	3	3	0	5	0	0	14	0	0	0
0 942 03-29 ARE ANY OF THE ANTENNAS YOU WORK ON CIRCULARLY POLARIZED	3	3	0	5	0	0	14	0	0	0
0 943 03-30 DO YOU MEASURE OR DETERMINE THE POLARITY OF ANTENNAS YOU WORK ON	3	3	0	5	0	0	14	0	0	0
0 944 03-31 DO YOU CONSTRUCT, OR MAKE THE CALCULATIONS NECESSARY TO CONSTRUCT, ANTENNAS OF CORRECT LENGTH FOR SPECIFIC WAVELENGTHS	3	3	0	5	0	0	14	0	0	0

PCT MBRS RESPONDING *YES* BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task Description	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010
0 945 03-22 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS	2	2	0	5	0	0	7	0	0	0
0 946 03-23 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS DIRECTORS	2	2	0	5	0	0	7	0	0	0
0 947 03-34 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS REFLECTORS	2	2	0	5	0	0	7	0	0	0
0 948 03-35 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN DON'T REMEMBER WHAT KIND OF ELEMENTS	2	2	0	5	0	0	7	0	0	0
0 949 03-36 DO YOU WORK ON UNIDIRECTIONAL ANTENNAS	3	3	0	5	0	0	14	0	0	0
0 950 03-37 DO YOU WORK ON BIDIRECTIONAL ANTENNAS	4	4	0	5	0	0	14	6	0	0
0 951 03-38 DO YOU WORK ON DON'T REMEMBER THE DIRECTIONALITY	3	3	0	5	0	0	7	0	0	0
0 952 03-39 DO YOU WORK WITH ROTAR ANTENNA ARRAYS	2	2	0	5	0	0	7	0	0	0
P 953 P1-01 IN YOUR PRESENT JOB DO YOU WORK WITH TRANSMISSION LINES (TRANSMISSION LINES ARE DEFINED TO INCLUDE LEADS BETWEEN RECEIVERS AND ANTENNAS, TELEPHONE LEADS, AS WELL AS HIGH VOLTAGE POWER LINES, ETC. DO NOT CONSIDER WAVEGUIDES AS TRANSMISSION LINES)	6	7	0	5	0	0	21	6	0	0
P 954 P1-02 DO YOU REFER TO OR USE COPPER LOSS OR I2R LOSS IN TRANSMISSION LINES	3	3	0	5	0	0	7	0	0	0
P 955 P1-03 DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY CURRENTS IN TRANSMISSION LINES	3	3	0	5	0	0	7	0	0	0
P 956 P1-04 DO YOU REFER TO OR USE RADIATION LOSS IN TRANSMISSION LINES	2	2	0	5	0	0	7	0	0	0
P 957 P1-05 DO YOU USE OR REFER TO DIELECTRIC LOSS IN TRANSMISSION LINES	2	2	0	5	0	0	7	0	0	0
P 958 P1-06 DO YOU USE OR REFER TO LEAKAGE LOSSES IN TRANSMISSION LINES	3	3	0	5	0	0	7	6	0	0
P 959 P1-07 DO YOU WORK WITH TWISTED PAIR TRANSMISSION LINES	1	1	0	5	0	0	0	0	0	0
P 960 P1-08 DO YOU WORK WITH TWIN LEAD TRANSMISSION LINES	2	2	0	5	0	0	7	0	0	0
P 961 P1-09 DO YOU WORK WITH OPEN TWO-WIRE TRANSMISSION LINES	2	2	0	5	0	0	6	0	0	0
P 962 P1-10 DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION LINES	5	5	0	5	0	0	21	6	0	0
P 963 P1-11 DO YOU WORK WITH RIGID COAXIAL CABLE TRANSMISSION LINES	3	3	0	5	0	0	14	0	0	0
P 964 P1-12 DO YOU TROUBLESHOOT TRANSMISSION LINES	4	4	0	5	0	0	21	0	0	0
P 965 P1-13 DO YOU ANALYZE VOLTAGE OR CURRENT WAVEFORMS IN TRANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION (OPEN, SHORTED, CAPACITIVE, INDUCTIVE)	2	2	0	5	0	0	6	0	0	0
P 966 P1-14 DO YOU SELECT APPROPRIATE TRANSMISSION LINES TERMINATIONS TO ACHIEVE DESIRED WAVEFORMS	3	3	0	5	0	0	14	0	0	0
P 967 P1-15 DO YOU USE OR REFER TO SCHEMATIC SYMBOLS FOR LINE TERMINATIONS IN TERMS OF CIRCUIT TERMINATIONS	5	5	0	5	0	0	21	6	0	0
P 968 P1-16 DO YOU MEASURE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES	2	2	0	5	0	0	7	0	0	0
P 969 P1-17 DO YOU CALCULATE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES	1	1	0	5	0	0	0	0	0	0
P 970 P1-18 DO YOU PERFORM THE CALCULATIONS NECESSARY TO DETERMINE THE IMPEDANCE AND LENGTH OF QUARTER - WAVELENGTH MATCHING TRANSFORMERS TO MATCH TRANSMISSION LINES TO LOADS	1	1	0	5	0	0	0	0	0	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task ID	Description	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010
P1003	P2-20 DO YOU USE OR REFER TO >B> WALL OF WAVEGUIDES	1	1	0	5	0	0	0	0	0	0
P1004	P2-21 DO YOU USE OR REFER TO CUTOFF FREQUENCY OF WAVEGUIDES	1	1	0	5	0	0	0	0	0	0
P1005	P2-22 DO YOU USE OR REFER TO FREQUENCY-DETERMINING WALL OF WAVEGUIDES	1	1	0	5	0	0	0	0	0	0
P1006	P2-23 DO YOU USE OR REFER TO POWER-DETERMINING WALL OF WAVEGUIDES	1	1	0	5	0	0	0	0	0	0
P1007	P2-24 DO YOU USE OR REFER TO ELECTRIC FIELD BOUNDARY CONDITIONS	1	1	0	5	0	0	0	0	0	0
P1008	P2-25 DO YOU USE OR REFER TO MAGNETIC FIELD BOUNDARY CONDITIONS	1	1	0	5	0	0	0	0	0	0
P1009	P2-26 DO YOU USE OR REFER TO DUPLEXER FIELD BOUNDARY CONDITIONS	1	1	0	5	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	1	1	0	5	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	1	1	0	5	0	0	0	0	0	0
P1012	P2-29 ARE YOU CONCERNED WITH THE MATERIAL (SUCH AS BRASS) WHICH WAVEGUIDES ARE MADE OF	1	1	0	5	0	0	0	0	0	0
P1013	P2-30 DO YOU COMPUTE THE LENGTH OF A WAVEGUIDE FOR SPECIFIC INSTALLATION	1	1	0	5	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	1	1	0	5	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	1	1	0	5	0	0	0	0	0	0
P1016	P2-33 DO YOU MEASURE THE TIME PHASE OF >E> OR >H> LINES IN WAVEGUIDES	1	1	0	5	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	1	1	0	5	0	0	0	0	0	0
P1018	P2-35 ARE HIGH POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	2	2	0	5	6	0	0	0	0	0
P1019	P2-36 ARE LOW POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	2	2	0	5	6	0	0	0	0	0
P1020	P2-37 ARE LOOPS USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	1	1	0	5	0	0	0	0	0	0
P1021	P2-38 ARE APERTURES (WINDOWS OR IRISES) USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	1	1	0	5	0	0	0	0	0	0
P1022	P2-39 ARE DON'T REMEMBER THE KIND OF ENERGY COUPLING USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	1	1	0	5	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	1	1	0	5	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	1	1	0	5	0	0	0	0	0	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task Description	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010
DI-TSK										
P1059 P3-26 DO YOU TUNE PARAMETRIC AMPLIFIERS	2	2	0	10	0	0	0	0	0	0
P1060 P3-27 DO YOU PERFORM OPERATIONAL CHECKS OF PARAMETRIC AMPLIFIERS	2	2	0	10	0	0	0	0	0	0
P1061 P3-28 DO YOU TROUBLESHOOT PARAMETRIC AMPLIFIERS	2	2	0	10	0	0	0	0	0	0
P1062 P3-29 DO YOU REMOVE OR REPLACE COMPLETE PARAMETRIC AMPLIFIER	2	2	0	10	0	0	0	0	0	0
P1063 P3-30 DO YOU REMOVE OR REPLACE PARAMETRIC AMPLIFIER COMPONENTS	2	2	0	10	0	0	0	0	0	0
P1064 P3-31 DO YOU INSPECT MAGNETRONS	12	12	8	25	11	17	21	6	0	0
P1065 P3-32 DO YOU CLEAN MAGNETRONS	9	9	8	15	11	17	21	0	0	0
P1066 P3-33 DO YOU ADJUST MAGNETRONS	8	8	8	15	11	17	14	0	0	0
P1067 P3-34 DO YOU TUNE MAGNETRONS	9	9	8	20	11	17	14	0	0	0
P1068 P3-35 DO YOU PERFORM OPERATIONAL CHECKS OF MAGNETRONS	12	12	8	25	11	17	21	6	0	0
P1069 P3-36 DO YOU TROUBLESHOOT MAGNETRONS	11	11	8	25	11	17	21	0	0	0
P1070 P3-37 DO YOU REMOVE OR REPLACE COMPLETE MAGNETRON	12	12	8	25	11	17	21	6	0	0
P1071 P3-38 DO YOU REMOVE OR REPLACE MAGNETRON COMPONENTS	4	4	0	10	0	0	14	0	0	0
P1072 P3-39 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS COLLECTOR PLATES	4	4	0	15	0	0	0	6	0	0
P1073 P3-40 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER CAVITIES	3	3	0	15	0	0	0	0	0	0
P1074 P3-41 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER GRIDS	4	4	0	15	0	0	0	6	0	0
P1075 P3-42 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS FEEDBACK LOOPS	3	2	8	10	0	17	0	0	0	0
P1076 P3-43 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS DRIFT SPACES	2	2	0	10	0	0	0	0	0	0
P1077 P3-44 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER GRIDS	2	2	0	10	0	0	0	0	0	0
P1078 P3-45 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER CAVITIES	2	2	0	10	0	0	0	0	0	0
P1079 P3-46 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CONTROL GRIDS	4	3	8	10	0	17	7	0	0	0
P1080 P3-47 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATHODES	4	3	8	10	0	17	7	0	0	0
P1081 P3-48 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON REPELLER (REFLECTOR) PLATES	2	2	0	10	0	0	0	0	0	0
P1082 P3-49 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRIDS	3	3	0	10	0	0	0	6	0	0
P1083 P3-50 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRID CAVITY GAPS	2	2	0	10	0	0	0	0	0	0
P1084 P3-51 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON RESONANT CAVITIES	2	2	0	10	0	0	0	0	0	0
P1085 P3-52 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON MAGNETIC COUPLING LOOPS	2	2	0	10	0	0	0	0	0	0
P1086 P3-53 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON FILAMENTS	3	3	0	10	0	0	0	6	0	0
P1087 P3-54 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON CATHODES	3	3	0	10	0	0	0	6	0	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task Description	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010
P1088 P3-55 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX MLYSTRON OUTPUT LEADS	2	2	0	10	0	0	0	0	0	0
P1089 P3-56 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES FILAMENTS	4	3	8	15	0	17	0	0	0	0
P1090 P3-57 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES CATHODES	4	3	8	15	0	17	0	0	0	0
P1091 P3-58 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MODULATOR GRIDS	3	2	8	10	0	17	0	0	0	0
P1092 P3-59 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ANODES	3	2	8	10	0	17	0	0	0	0
P1093 P3-60 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES HELIXES	3	2	8	10	0	17	0	0	0	0
P1094 P3-61 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES COLLECTORS	3	2	8	10	0	17	0	0	0	0
P1095 P3-62 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MAGNETS	3	2	8	10	0	17	0	0	0	0
P1096 P3-63 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ATTENUATORS	3	2	8	10	0	17	0	0	0	0
P1097 P3-64 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE CIRCULATORS	2	2	0	10	0	0	0	0	0	0
P1098 P3-65 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER SIGNAL CAVITIES	2	2	0	10	0	0	0	0	0	0
P1099 P3-66 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER IDLER CAVITIES	2	2	0	10	0	0	0	0	0	0
P1100 P3-67 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER VARACTOR DIODES	2	2	0	10	0	0	0	0	0	0
P1101 P3-68 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE ISOLATORS	2	2	0	10	0	0	0	0	0	0
P1102 P3-69 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER REVERSE-BIAS BATTERIES	2	2	0	10	0	0	0	0	0	0
P1103 P3-70 DO YOU PERFORM TASKS ON ANODES	8	8	8	15	6	17	14	6	0	0
P1104 P3-71 DO YOU PERFORM TASKS ON ANODE COOLING PINS	6	7	0	15	6	0	14	0	0	0
P1105 P3-72 DO YOU PERFORM TASKS ON COUPLING LOOPS	7	8	0	20	6	0	14	0	0	0
P1106 P3-73 DO YOU PERFORM TASKS ON HEATER LEADS	8	9	0	25	6	0	14	0	0	0
P1107 P3-74 DO YOU PERFORM TASKS ON RESONANT CAVITIES	7	8	0	15	11	0	14	0	0	0
P1108 P3-75 DO YOU PERFORM TASKS ON CATHODES	9	9	8	20	6	17	14	6	0	0
P1109 P3-76 DO YOU PERFORM TASKS ON MAGNETS	8	8	8	20	6	17	14	0	0	0
Q1110 Q1-01 DO YOU USE OR REFER TO STORAGE REGISTERS	29	32	8	35	44	17	21	18	29	0
Q1111 Q1-02 DO YOU USE OR REFER TO SHIFT REGISTERS	29	31	15	35	44	33	21	18	29	0
Q1112 Q1-03 DO YOU USE OR REFER TO LOGIC SYMBOLS OF SHIFT REGISTERS	27	30	8	35	44	17	21	18	14	0
Q1113 Q1-04 DO YOU USE OR REFER TO LOGIC SYMBOLS OF STORAGE REGISTERS	27	30	8	35	44	17	21	18	14	0
Q1114 Q1-05 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	28	31	8	40	44	17	21	18	14	0
Q1115 Q1-06 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF REGISTERS	27	30	8	40	33	17	29	18	14	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task ID	Description	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010
Q1116	Q1-07 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES HAVE PASSED	26	29	8	30	44	17	29	18	14	0
Q1117	Q2-01 DO YOU WORK WITH DIGITAL COUNTERS, REGISTERS, OR STORAGE DEVICES IN YOUR PRESENT JOB	31	31	31	25	39	50	36	24	29	17
Q1118	Q2-02 DO YOU USE OR REFER TO DELAY LINES	10	10	8	15	11	17	7	6	0	0
Q1119	Q2-03 DO YOU USE OR REFER TO MAGNETIC CORES	10	11	0	10	11	0	7	6	0	0
Q1120	Q2-04 DO YOU USE OR REFER TO MAGNETIC DRUMS	7	8	0	10	11	0	0	6	0	0
Q1121	Q2-05 DO YOU USE OR REFER TO MAGNETIC TAPES	10	11	0	10	11	0	0	12	0	0
Q1122	Q2-06 DO YOU USE OR REFER TO ACCESS TIME OR SPEED OR MEMORY SYSTEMS	15	16	8	15	28	17	0	12	14	0
Q1123	Q2-07 DO YOU USE OR REFER TO WORD CAPACITY OF MEMORY SYSTEMS	12	11	15	15	17	33	7	6	0	0
Q1124	Q2-08 DO YOU USE OR REFER TO VOLATILITY OF MEMORY SYSTEMS	7	8	0	10	6	0	7	6	0	0
Q1125	Q2-09 DO YOU USE OR REFER TO LOGIC SYMBOL OF DELAY LINES	13	13	8	20	11	17	14	12	0	0
Q1126	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	32	34	15	40	33	33	43	24	14	0
Q1127	Q3-02 DO YOU COMPUTE OUTPUT VOLTAGES FOR ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT VOLTAGES	13	14	0	25	6	0	29	12	0	0
Q1128	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	13	15	0	20	11	0	29	18	0	0
Q1129	Q3-04 DO YOU COMPUTE ANALOG VOLTAGES FOR GIVEN BINARY COUNTS IN ELECTRONIC DIGITAL-TO-ANALOG (D/A) CONVERTERS	18	21	0	25	22	0	36	12	14	0
Q1130	Q3-05 DO YOU PERFORM SAMPLE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	21	23	8	35	17	17	29	18	14	0
Q1131	Q3-06 DO YOU PERFORM HOLD FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	21	23	8	35	17	17	29	18	14	0
Q1132	Q3-07 DO YOU PERFORM COMPARE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	21	23	8	35	17	17	29	18	14	0
Q1131	Q3-08 DO YOU PERFORM DIGITIZE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	21	23	8	35	17	17	29	18	14	0
Q1134	Q3-09 DO YOU PERFORM COUNT RESEMBER WHICH FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	12	13	0	20	11	0	29	6	0	0
Q1135	Q3-10 DO YOU USE OR REFER TO SAMPLE FUNCTION OF A/D CONVERTERS	22	24	8	35	22	17	29	12	14	0
Q1136	Q3-11 DO YOU USE OR REFER TO HOLD FUNCTION OF A/D CONVERTERS	22	24	8	35	22	17	29	12	14	0
Q1137	Q3-12 DO YOU USE OR REFER TO COMPARE FUNCTION OF A/D CONVERTERS	21	23	8	35	22	17	29	12	14	0
Q1138	Q3-13 DO YOU USE OR REFER TO DIGITAL FUNCTION OF A/D CONVERTERS	23	25	8	35	22	17	29	18	14	0
Q1139	Q3-14 DO YOU PERFORM ANY TASKS ON MECHANICAL ANALOG-TO-DIGITAL (A/D) CONVERTERS	17	20	0	25	17	0	36	12	0	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task ID	Description	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010
11169	11-11 DO YOU USE OR REFER TO FAR REGION	7	8	0	15	6	0	7	0	0	0
11170	11-12 DO YOU USE OR REFER TO INTERMEDIATE REGION	7	7	8	15	6	17	7	0	0	0
11171	11-13 DO YOU USE OR REFER TO NEAR REGION	6	7	0	15	6	C	7	C	0	0
11172	11-14 DO YOU USE OR REFER TO MICRON	12	12	8	15	17	17	21	0	0	0
11173	11-15 DO YOU USE OR REFER TO GRAY BODIES	3	3	0	10	6	0	0	0	0	0
11174	11-16 DO YOU USE OR REFER TO BLACK BODIES	5	5	0	10	6	0	7	0	0	0
11175	11-17 DO YOU USE OR REFER TO ABSORPTION	13	14	8	15	17	17	21	C	0	0
11176	11-18 DO YOU USE OR REFER TO SCATTERING	11	12	0	15	11	0	21	0	0	0
11177	11-19 DO YOU USE OR REFER TO ABSOLUTE ZERO	9	9	8	15	11	17	7	C	0	0
11178	11-20 DO YOU PERFORM TASKS ON BLITZ	2	2	0	5	0	0	7	C	0	0
11179	11-21 DO YOU PERFORM TASKS ON TARGET BUTTONS	2	2	0	5	0	0	7	C	0	0
11180	11-22 DO YOU PERFORM TASKS ON EJECTOR LENSES	3	3	0	10	0	0	7	0	0	0
11181	11-23 DO YOU PERFORM TASKS ON OCULAR LENSES	7	8	0	15	6	0	7	0	0	0
11182	11-24 DO YOU PERFORM TASKS ON CORRECTION LENSES	4	4	0	15	0	0	7	0	0	0
11183	11-25 DO YOU PERFORM TASKS ON FILTERS	12	11	15	15	6	17	21	0	0	17
11184	11-26 DO YOU PERFORM TASKS ON SPHERICAL MIRRORS	8	8	8	10	0	17	21	C	0	0
11185	11-27 DO YOU PERFORM TASKS ON PLANE MIRRORS	8	8	8	10	6	17	21	0	0	0
11186	12-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH LASERS	9	8	15	5	11	0	29	0	0	17
11187	12-02 DO YOU INSPECT LASER SYSTEMS	9	8	15	5	11	0	29	0	0	17
11188	12-03 DO YOU CLEAN LASER SYSTEMS	8	7	15	5	6	0	29	0	0	17
11189	12-04 DO YOU OPERATE LASER SYSTEMS	7	7	8	5	6	0	29	0	0	0
11190	12-05 DO YOU OPERATE LASER SYSTEMS	6	5	8	5	0	0	29	0	0	0
11191	12-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF LASER SYSTEMS	7	5	15	5	0	0	29	0	0	17
11192	12-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF LASER SYSTEMS	6	5	8	5	0	0	29	C	0	0
11193	12-08 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF LASER SYSTEMS	6	5	8	5	0	0	29	0	0	17
11194	12-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF LASER SYSTEMS	7	5	15	5	0	0	29	0	0	17
11195	12-10 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF LASER SYSTEMS	6	5	8	5	0	0	29	0	0	17
11196	12-11 DO YOU USE OR REFER TO ANGSTROMS (A)	4	4	0	5	6	0	14	C	0	0
11197	12-12 DO YOU USE OR REFER TO ELECTRON ENERGY LEVELS	4	4	0	5	6	0	14	0	0	0
11198	12-13 DO YOU USE OR REFER TO GROUND STATE	4	4	0	5	6	0	14	0	0	0
11199	12-14 DO YOU USE OR REFER TO EXCITED STATE	3	3	0	5	0	0	14	0	0	0
11200	12-15 DO YOU USE OR REFER TO PACKET OF RADIATION	3	3	0	5	0	0	14	0	0	0
11201	12-16 DO YOU USE OR REFER TO PHOTONS	3	3	0	5	0	0	14	C	0	0
11202	12-17 DO YOU USE OR REFER TO SPONTANEOUS EMISSION	4	4	0	5	0	0	21	C	0	0
11203	12-18 DO YOU USE OR REFER TO STIMULATED EMISSION	4	4	0	5	0	0	21	C	0	0
11204	12-19 DO YOU USE OR REFER TO COHERENCE OR INCOHERENCE	3	3	0	5	0	0	14	0	0	0
11205	12-20 DO YOU USE OR REFER TO INVERSION LEVEL	3	3	0	5	0	0	14	C	0	0
11206	12-21 DO YOU USE OR REFER TO MONOCHROMATIC	4	4	0	5	6	0	14	0	0	0
11207	12-22 DO YOU WORK WITH ACTIVE MATERIALS	2	2	0	5	0	0	7	0	0	0
11208	12-23 DO YOU WORK WITH PUMPING SOURCES	3	3	0	5	6	0	7	0	0	0
11209	12-24 DO YOU WORK WITH FULL SILVERED (11008 REFLECTIVE) MIRRORS	3	3	0	5	6	0	7	0	0	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DIAGNOSTIC	DESCRIPTION	001	002	003	004	005	006	007	008	009	010
DIAGNOSTIC	DIAGNOSTIC	3	3	0	5	6	0	7	0	0	0
DIAGNOSTIC	DIAGNOSTIC	3	3	0	5	6	0	7	0	0	0
DIAGNOSTIC	DIAGNOSTIC	2	2	0	5	0	0	7	0	0	0
DIAGNOSTIC	DIAGNOSTIC	2	2	0	5	0	0	7	0	0	0
DIAGNOSTIC	DIAGNOSTIC	2	2	0	5	0	0	7	0	0	0
DIAGNOSTIC	DIAGNOSTIC	2	2	0	5	0	0	7	0	0	0
DIAGNOSTIC	DIAGNOSTIC	3	3	0	5	0	0	7	6	0	0
DIAGNOSTIC	DIAGNOSTIC	2	2	0	5	0	0	7	0	0	0
DIAGNOSTIC	DIAGNOSTIC	13	15	0	25	6	0	36	12	0	0
DIAGNOSTIC	DIAGNOSTIC	13	14	0	20	6	0	36	12	0	0
DIAGNOSTIC	DIAGNOSTIC	12	13	0	20	0	0	29	12	0	0
DIAGNOSTIC	DIAGNOSTIC	12	13	0	20	0	0	36	12	0	0
DIAGNOSTIC	DIAGNOSTIC	13	15	0	20	6	0	29	12	0	0
DIAGNOSTIC	DIAGNOSTIC	13	14	0	20	6	0	36	12	0	0
DIAGNOSTIC	DIAGNOSTIC	13	14	0	20	6	0	36	12	0	0
DIAGNOSTIC	DIAGNOSTIC	9	10	0	15	6	0	29	6	0	0
DIAGNOSTIC	DIAGNOSTIC	7	8	0	15	6	0	14	6	0	0
DIAGNOSTIC	DIAGNOSTIC	8	9	0	15	11	0	14	6	0	0
DIAGNOSTIC	DIAGNOSTIC	8	9	0	15	11	0	14	6	0	0
DIAGNOSTIC	DIAGNOSTIC	7	8	0	15	11	0	7	6	0	0
DIAGNOSTIC	DIAGNOSTIC	6	7	0	15	6	0	7	6	0	0
DIAGNOSTIC	DIAGNOSTIC	10	11	0	25	6	0	21	6	0	0
DIAGNOSTIC	DIAGNOSTIC	1	1	0	0	0	0	7	0	0	0
DIAGNOSTIC	DIAGNOSTIC	3	3	0	5	6	0	7	0	0	0
DIAGNOSTIC	DIAGNOSTIC	3	3	0	5	6	0	7	0	0	0
DIAGNOSTIC	DIAGNOSTIC	3	3	0	5	6	0	7	0	0	0
DIAGNOSTIC	DIAGNOSTIC	2	2	0	5	0	0	7	0	0	0
DIAGNOSTIC	DIAGNOSTIC	2	2	0	5	0	0	7	0	0	0
DIAGNOSTIC	DIAGNOSTIC	2	2	0	5	0	0	7	0	0	0
DIAGNOSTIC	DIAGNOSTIC	3	3	0	5	6	0	7	0	0	0
DIAGNOSTIC	DIAGNOSTIC	3	3	0	5	6	0	7	0	0	0
DIAGNOSTIC	DIAGNOSTIC	3	3	0	5	6	0	7	0	0	0
DIAGNOSTIC	DIAGNOSTIC	3	3	0	5	6	0	7	0	0	0
DIAGNOSTIC	DIAGNOSTIC	2	2	0	5	0	0	7	0	0	0
DIAGNOSTIC	DIAGNOSTIC	2	2	0	5	0	0	7	0	0	0

DIAGNOSTIC 12-25 DO YOU WORK WITH HALF SILVERED (92% REFLECTIVE) MIRRORS

DIAGNOSTIC 12-26 DO YOU WORK WITH HELICAL FLASHTUBES

DIAGNOSTIC 12-27 DO YOU WORK WITH RUBY

DIAGNOSTIC 12-28 DO YOU WORK WITH HELIUM-NEON

DIAGNOSTIC 12-29 DO YOU WORK WITH HELIUM-XENON

DIAGNOSTIC 12-30 DO YOU WORK WITH XENON

DIAGNOSTIC 12-31 DO YOU WORK WITH CESIUM-HELIUM

DIAGNOSTIC 12-32 DO YOU WORK WITH ARGON

DIAGNOSTIC 12-33 DO YOU WORK WITH NEODYMIUM IN GLASS

DIAGNOSTIC 12-34 DO YOU WORK WITH GALLIUM ARSENIDE

DIAGNOSTIC 13-01 IN YOUR PRESENT JOB DO YOU WORK WITH DISPLAY TUBES, SUCH AS DIRECT VIEW STORAGE (DVST) OR MULTIPLE MODE STORAGE TUBES (MMST)

DIAGNOSTIC 13-02 DO YOU INSPECT DVST OR MMST

DIAGNOSTIC 13-03 DO YOU CLEAN DVST OR MMST

DIAGNOSTIC 13-04 DO YOU ADJUST OR CALIBRATE DVST OR MMST

DIAGNOSTIC 13-05 DO YOU OPERATE SYSTEMS THAT CONTAIN DVST OR MMST

DIAGNOSTIC 13-06 DO YOU TROUBLESHOOT DVST OR MMST CIRCUITS

DIAGNOSTIC 13-07 DO YOU REMOVE OR REPLACE DVST OR MMST TUBES FROM MAJOR ASSEMBLIES OR UNITS

DIAGNOSTIC 13-08 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF DVST

DIAGNOSTIC 13-09 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF MMST

DIAGNOSTIC 13-10 DO YOU PERFORM TASKS ON FLOOD GUNS

DIAGNOSTIC 13-11 DO YOU PERFORM TASKS ON WRITE GUNS

DIAGNOSTIC 13-12 DO YOU PERFORM TASKS ON ATTACK GUNS

DIAGNOSTIC 13-13 DO YOU PERFORM TASKS ON ERASE GUNS

DIAGNOSTIC 13-14 DO YOU PERFORM TASKS ON STORAGE GRIDS

DIAGNOSTIC UI-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY PROGRAMMING TASKS

DIAGNOSTIC UI-02 DO YOU USE OR REFER TO DECIMAL SYSTEMS

DIAGNOSTIC UI-03 DO YOU USE OR REFER TO PROGRAMS

DIAGNOSTIC UI-04 DO YOU USE OR REFER TO HEXIDECIMAL SYSTEMS

DIAGNOSTIC UI-05 DO YOU USE OR REFER TO 8-4-2-1 SYSTEMS

DIAGNOSTIC UI-06 DO YOU USE OR REFER TO FOUR SYSTEMS

DIAGNOSTIC UI-07 DO YOU USE OR REFER TO BINARY SYSTEMS

DIAGNOSTIC UI-08 DO YOU USE OR REFER TO TIME-SHARING

DIAGNOSTIC UI-09 DO YOU USE OR REFER TO DATA WORDS

DIAGNOSTIC UI-10 DO YOU USE OR REFER TO ADDRESS WORDS

DIAGNOSTIC UI-11 DO YOU USE OR REFER TO ADDRESS/SUBADDRESS

DIAGNOSTIC UI-12 DO YOU USE OR REFER TO STEERING/INFORMATION

DIAGNOSTIC UI-13 DO YOU USE OR REFER TO INFORMATION WORDS

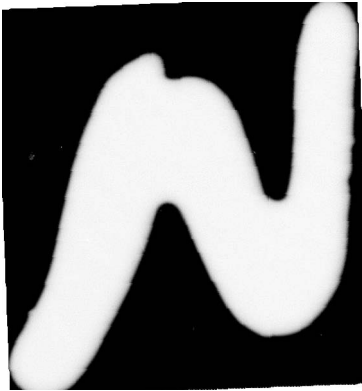
DIAGNOSTIC UI-14 DO YOU PERFORM TASKS ON SINGLE LEVEL PROGRAMMING

DIAGNOSTIC UI-15 DO YOU PERFORM TASKS ON MULTI-LEVEL PROGRAMMING

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006	SPC 007	SPC 008	SPC 009	SPC 010
U1249 U1-16 DO YOU PERFORM TASKS ON INPUT DEVICES	2	2	0	5	0	0	7	0	0	0
U1250 U1-17 DO YOU PERFORM TASKS ON STORAGE DEVICES	3	3	0	5	6	0	7	0	0	0
U1251 U1-18 DO YOU PERFORM TASKS ON ARITHMETIC SECTIONS	3	3	0	5	6	0	7	0	0	0
U1252 U1-19 DO YOU PERFORM TASKS ON CONTROL SECTIONS	4	4	0	5	6	0	7	6	0	0
U1253 U1-20 DO YOU PERFORM TASKS ON OUTPUT DEVICES	4	4	0	5	6	0	7	6	0	0
U1254 U1-21 DO YOU PERFORM TASKS ON POWER SUPPLIES	5	5	0	5	6	0	7	12	0	0
U1255 U2-01 DO YOU USE DECIBELS TO EXPRESS AMPLIFICATION AND ATTENUATION	50	52	38	55	67	50	57	35	14	33
U1256 U2-02 DO YOU USE LOGARITHMS TO COMPUTE OUTPUT POWER IN DECIBELS	22	25	0	40	39	0	21	0	0	0
U1257 U2-03 DO YOU USE LOGARITHMS TO COMPUTE ATTENUATION IN DECIBELS	21	24	0	40	39	0	21	0	0	0
U1258 U2-04 DUMMY TASK TO IDENTIFY INCUMBENTS WHO PERFORMED NO TASKS	0	0	0	0	0	0	0	0	0	0

DB AND POWER RATIOS



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AIR FORCE OCCUPATIONAL MEASUREMENT CENTER LACKLAND A--ETC F/G 5/9
BIOMEDICAL EQUIPMENT MAINTENANCE SPECIALIST AFSC 40350.(U)
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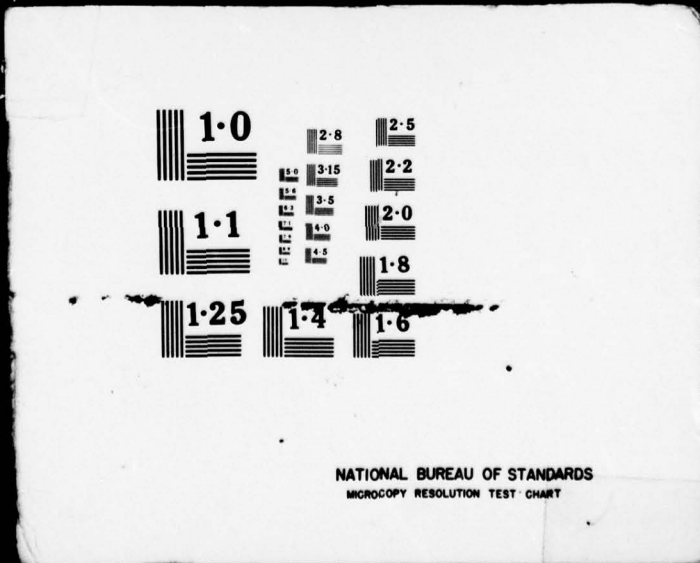


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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned as Biomedical Equipment Maintenance Specialist (AFSC 40350). This report gives a detailed listing of the technical tasks and knowledge needed to perform the jobs within the specialty or career ladder. <i>(Signature)</i> CONTINUED		

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This specialty has the following functions:

Installs, inspects, repairs, calibrates, and modifies biomedical equipment and support systems and advises concerning theory of operation, underlying physiological principles, and safe clinical application of biomedical equipment. Performs proper inspection and maintenance on biomedical equipment and support systems. Repairs, calibrates, modifies and installs biomedical equipment and support equipment systems. Maintains inspection and repair records. Supervises biomedical equipment maintenance personnel.



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