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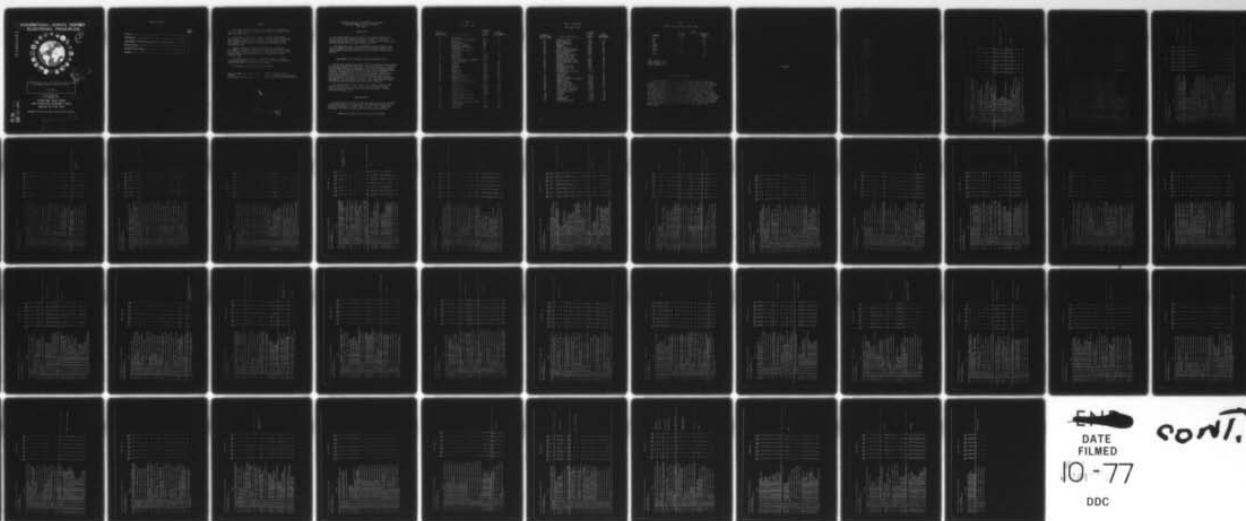
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9 OCCUPATIONAL SURVEY REPORT
ELECTRONIC PRINCIPLES

Apr-Jun 77.

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ELECTRONIC COMPUTER SYSTEMS SPECIALIST

AFSC 30554

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OCCUPATIONAL SURVEY BRANCH
USAF OCCUPATIONAL MEASUREMENT CENTER
LACKLAND AFB TEXAS 78236

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PREFACE

This report presents a summary of the results of a detailed Air Force Electronic Principles Survey of the Electronic Computer System Specialist, AFSC 30554.

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 Major Walter F. Kasper. 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

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ELECTRONIC PRINCIPLES OCCUPATIONAL SURVEY REPORT
ELECTRONIC COMPUTER SYSTEMS SPECIALIST
AFSC 30554

INTRODUCTION

→ This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned as Electronic Computer Systems Specialist (AFSC 30554). The data for this report were collected during the period April through June 1977.

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

DEVELOPMENT OF THE ELECTRONIC PRINCIPLES INVENTORY (EPI)

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

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

ADMINISTRATION

The Electronic Principles Inventory was administered by mail to AFSC 30554 airmen worldwide. Responses from 350 individuals represented 46 percent of the total of all AFSC 30554 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	P1034	37
49	REGISTERS	Q1110	39
50	STORAGE DEVICES	Q1117	40
51	DIGITAL TO ANALOG CONVERTERS	Q1126	40
52	PHANTASTRONS	Q1140	41
53	SCHMITT TRIGGERS	R1141	41
54	CABLE FABRICATION	R1144	41
55	INPUT/OUTPUT DEVICES	S1146	41
56	PHOTO SENSITIVE DEVICES	S1149	41
57	SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS)	S1150	41
58	INFRARED	T1159	41
59	LASERS	T1186	42
60	DISPLAY TUBES	T1220	43
61	PROGRAMMING	U1234	43
62	DB AND POWER RATIOS	U1255	44

TABLE 2
COMMAND REPRESENTATION OF SURVEY SAMPLE

COMMAND	30554	
	PERCENT ASSIGNED	PERCENT OF SAMPLE
AFCS	37	33
ADC	27	30
TAC	11	11
USAFE	7	11
USAFSS	7	4
ATC	6	3
OTHER	5	8
TOTAL	100	100

Total Assigned - 766
Total Sampled - 350
Percent Sampled - 46

PRESENTATION OF RESULTS

Personnel responded "yes" or "no" to the 1,257 electronic principles questions as related to their present job. A Group Summary (GPSUM) computer printout is provided in the Appendix portion of this report. Page 1 of the GPSUM lists the seven selected groups identified for this report. Pages 2-44 show the percentage of the incumbents responding to the EPI items. The computer program results display the percent members answering "yes" to the subject area questions. The reader can locate a specific subject area by referring to the Appendix page number as listed in Table 1. For example, the Transformers area results are given on page 6 of the GPSUM. The percentage of survey respondents indicating use of specific electronic principles ranged from high in areas such as Resistance (pp. 2-3) and Registers (pp. 39-40) to low in areas such as Transmission Lines (pp. 34-35). Additional AFSC 305X4 data can be obtained upon request to the Chief, Occupational Survey Branch (OMY).

APPENDIX

PCT ADS RESPONDING AREA BY SELECTED GRPS

GRSM13 PAGE 1

TABLE OF ELECTRONIC PRINCIPLES UTILIZATION DATA FOR SELECTED GROUPS
IN THE 3000 AREA FIELD.

REPORTS ON THE FOLLOWING GROUPS WERE REQUESTED

GROUP IDENTITY =	SPC201	ALL AIRMEN DAFSC J0554	CONTAINING	350 MEMBERS*
GROUP IDENTITY =	SPC202	ALL AIRMEN DAFSC J0554 STATIONED IN CONUS	CONTAINING	276 MEMBERS*
GROUP IDENTITY =	SPC203	ALL AIRMEN DAFSC J0554 STATIONED OVERSEAS	CONTAINING	74 MEMBERS*
GROUP IDENTITY =	SPC204	ALL AIRMEN DAFSC J0554 ASSIGNED TO ADC	CONTAINING	105 MEMBERS*
GROUP IDENTITY =	SPC205	ALL AMN DAFSC J0554 ASSIGNED TO AFCS	CONTAINING	114 MEMBERS*
GROUP IDENTITY =	SPC206	ALL AMN DAFSC J0554 ASSIGNED TO IAC	CONTAINING	37 MEMBERS*
GROUP IDENTITY =	SPC207	ALL AMN DAFSC J0554 ASSIGNED TO JAFSS	CONTAINING	14 MEMBERS*

TASK GROUP SUMMARY PERCENT MEMBERS PLANNING

SAC	SAC	SAC	SAC	SAC
105	105	105	105	105
106	106	106	106	106
107	107	107	107	107
108	108	108	108	108
109	109	109	109	109
110	110	110	110	110
111	111	111	111	111
112	112	112	112	112
113	113	113	113	113
114	114	114	114	114
115	115	115	115	115
116	116	116	116	116
117	117	117	117	117
118	118	118	118	118
119	119	119	119	119
120	120	120	120	120
121	121	121	121	121
122	122	122	122	122
123	123	123	123	123
124	124	124	124	124
125	125	125	125	125
126	126	126	126	126
127	127	127	127	127
128	128	128	128	128
129	129	129	129	129
130	130	130	130	130
131	131	131	131	131
132	132	132	132	132
133	133	133	133	133
134	134	134	134	134
135	135	135	135	135
136	136	136	136	136
137	137	137	137	137
138	138	138	138	138
139	139	139	139	139
140	140	140	140	140
141	141	141	141	141
142	142	142	142	142
143	143	143	143	143
144	144	144	144	144
145	145	145	145	145
146	146	146	146	146
147	147	147	147	147
148	148	148	148	148
149	149	149	149	149
150	150	150	150	150
151	151	151	151	151
152	152	152	152	152
153	153	153	153	153
154	154	154	154	154
155	155	155	155	155
156	156	156	156	156
157	157	157	157	157
158	158	158	158	158
159	159	159	159	159
160	160	160	160	160
161	161	161	161	161
162	162	162	162	162
163	163	163	163	163
164	164	164	164	164
1				

[illegible]

2. ALSO DO YOU USE PUBLICATIONS, SUCH AS A TECHNICAL ORDERS OR MAINTENANCE MANUALS, IN WHICH IT IS NECESSARY FOR YOU TO MULTIPLY OR DIVIDE BY A POWER OF 10 BEFORE YOU CAN APPLY THE INFORMATION FROM THE PUBLICATION IN A USEFUL WAY ON THE JOB?

3. ABOUT YOU HEARINGS AND SOLVE: FORMULAS OR EQUATIONS.

IF YOU CALCULATE THE SQUARE ROOT OF A QUANTITY,

5. ALWAYS DO YOU SOLVE FOR UNKNOWN QUANTITIES.

6 A1=06 DC YOU CONVERT NUMBERS TO LOGARITHMS.

7 A1-07 DO YOU USE LOGARITHM TABLES IN ANY TYPE OF

CALCULATIONS

8 A1-08 DO YOU SOLVE QUADRATIC EQUATIONS.

9 AI-09 DO YOU USE THE NATURAL SYSTEM OF LOGARITHMS.

4 10 11-10 DO YOU PERFORM CALCULATIONS ON VECTOR QUANTITIES.

A 11 41-11 DO YOU WORK WITH TRIGONOMETRIC FUNCTIONS

SINE, COSINE, OR TANGENT.

4 12 A1-12 DO YOU DETERMINE AREAS OF PLANE F

A 13 AI-13 DO YOU SOLVE OR USE SIMULTANEOUS EQUATION

A. $|A| = 14$ DO YOU SOLVE ON USE PROPORTIONS.

4 15 12 01 00 YOU USE THE TERM VOLTAGE

16 42-02 DO YOU USE THE TERM ELECT

17 A2-03 DO YOU USE THE TERM

18 12-04 DO YOU USE THE TERM

A 19 A2-G5 DO YOU USE THE TERM DYNE.

4	20	42-06	00	YOU	USE	TIME	TERM	AMPERE
4	20	42-06	00	YOU	USE	TIME	TERM	AMPERE
4	20	42-07	00	YOU	USE	TIME	TERM	AMPERE

A	Z1	A2-07	OC	YOU	USE	THE	TERM	NEUTRON.
	Z2	A2-08	OC	YOU	USE	THE	TERM	COLLISION

THE TERM COULOMB.

23 A2-34 DO YOU USE THE TERM PROTON

24	A3-01	DO	YOU INSPECT RESISTORS?
25	A3-02	DO	YOU INSPECT RESISTORS?

40	25	43-20	00	YOU	100	INSPECT	RESISTORS.
41	26	43-20	00	YOU	100	INSPECT	RESISTORS.
42	27	43-20	00	YOU	100	INSPECT	RESISTORS.
43	28	43-20	00	YOU	100	INSPECT	RESISTORS.
44	29	43-20	00	YOU	100	INSPECT	RESISTORS.
45	30	43-20	00	YOU	100	INSPECT	RESISTORS.
46	31	43-20	00	YOU	100	INSPECT	RESISTORS.
47	32	43-20	00	YOU	100	INSPECT	RESISTORS.
48	33	43-20	00	YOU	100	INSPECT	RESISTORS.
49	34	43-20	00	YOU	100	INSPECT	RESISTORS.
50	35	43-20	00	YOU	100	INSPECT	RESISTORS.
51	36	43-20	00	YOU	100	INSPECT	RESISTORS.
52	37	43-20	00	YOU	100	INSPECT	RESISTORS.
53	38	43-20	00	YOU	100	INSPECT	RESISTORS.
54	39	43-20	00	YOU	100	INSPECT	RESISTORS.
55	40	43-20	00	YOU	100	INSPECT	RESISTORS.
56	41	43-20	00	YOU	100	INSPECT	RESISTORS.
57	42	43-20	00	YOU	100	INSPECT	RESISTORS.
58	43	43-20	00	YOU	100	INSPECT	RESISTORS.
59	44	43-20	00	YOU	100	INSPECT	RESISTORS.
60	45	43-20	00	YOU	100	INSPECT	RESISTORS.
61	46	43-20	00	YOU	100	INSPECT	RESISTORS.
62	47	43-20	00	YOU	100	INSPECT	RESISTORS.
63	48	43-20	00	YOU	100	INSPECT	RESISTORS.
64	49	43-20	00	YOU	100	INSPECT	RESISTORS.
65	50	43-20	00	YOU	100	INSPECT	RESISTORS.
66	51	43-20	00	YOU	100	INSPECT	RESISTORS.
67	52	43-20	00	YOU	100	INSPECT	RESISTORS.
68	53	43-20	00	YOU	100	INSPECT	RESISTORS.
69	54	43-20	00	YOU	100	INSPECT	RESISTORS.
70	55	43-20	00	YOU	100	INSPECT	RESISTORS.
71	56	43-20	00	YOU	100	INSPECT	RESISTORS.
72	57	43-20	00	YOU	100	INSPECT	RESISTORS.
73	58	43-20	00	YOU	100	INSPECT	RESISTORS.
74	59	43-20	00	YOU	100	INSPECT	RESISTORS.
75	60	43-20	00	YOU	100	INSPECT	RESISTORS.
76	61	43-20	00	YOU	100	INSPECT	RESISTORS.
77	62	43-20	00	YOU	100	INSPECT	RESISTORS.
78	63	43-20	00	YOU	100	INSPECT	RESISTORS.
79	64	43-20	00	YOU	100	INSPECT	RESISTORS.
80	65	43-20	00	YOU	100	INSPECT	RESISTORS.
81	66	43-20	00	YOU	100	INSPECT	RESISTORS.
82	67	43-20	00	YOU	100	INSPECT	RESISTORS.
83	68	43-20	00	YOU	100	INSPECT	RESISTORS.
84	69	43-20	00	YOU	100	INSPECT	RESISTORS.
85	70	43-20	00	YOU	100	INSPECT	RESISTORS.
86	71	43-20	00	YOU	100	INSPECT	RESISTORS.
87	72	43-20	00	YOU	100	INSPECT	RESISTORS.
88	73	43-20	00	YOU	100	INSPECT	RESISTORS.
89	74	43-20	00	YOU	100	INSPECT	RESISTORS.
90	75	43-20	00	YOU	100	INSPECT	RESISTORS.
91	76	43-20	00	YOU	100	INSPECT	RESISTORS.
92	77	43-20	00	YOU	100	INSPECT	RESISTORS.
93	78	43-20	00	YOU	100	INSPECT	RESISTORS.
94	79	43-20	00				

A 26 A3-03 DO YOU CLEAN RESISTORS.
A 27 A3-04 DO YOU ADJUST RESISTORS.

26	A3-05	DO YOU CHECK OHMIC VALUE OF RESISTORS?
27	A3-04	DO YOU CHECK OHMIC VALUE OF RESISTORS?
28	A3-05	DO YOU CHECK OHMIC VALUE OF RESISTORS?

28 43-03 DO YOU CHECK OHMIC VALUE OR RESISTORS.
29 43-04 DO YOU REMOVE OR REPLACE RESISTORS.

30 43-07 DO YOU USE OR REFER TO TEMPERATURE COEFFICIENTS FOR

RESISTORS ON ANY TASKS YOU PERFORM.

RESISTOR SYMBOLS SUCH AS FIXED

MATHEMATICS

DIRECT CURRENT AND VOLTAGE

RESISTANCE

PCI MEMS RESPONDING 'YES' BY SELECTED GRPS

GPSM13 PAGE 4

TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

UY-TSK

	SPC 201	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207
61 B2-01 DO YOU USE OR REFER TO THE TERM EFFECTIVE VOLTAGE (RMS).	58	58	58	54	58	68	64
62 B2-02 DO YOU USE OR REFER TO THE TERM PEAK TO PEAK VOLTAGE.	80	83	69	90	77	78	86
63 B2-03 DO YOU USE OR REFER TO THE TERM AVERAGE VOLTAGE (DC).	67	70	55	78	64	65	64
64 B2-04 DO YOU USE OR REFER TO THE TERM WAVE LENGTH.	52	57	36	54	55	70	36
65 B2-05 DO YOU USE OR REFER TO THE TERM FREQUENCY.	82	86	68	77	86	79	79
66 B2-06 DO YOU USE OR REFER TO THE TERM INSTANTANEOUS VALUE.	21	21	22	23	18	30	7
67 B3-01 DO YOU WORK WITH INDUCTORS OR CIRCUITS CONTAINING INDUCTORS, CHOKES, OR CHOKE COILS IN YOUR PRESENT JOB.	47	47	46	51	45	57	57
68 B3-02 DO YOU INSPECT INDUCTORS.	44	44	42	47	43	57	36
69 B3-03 DO YOU CLEAN INDUCTORS.	35	35	34	39	34	43	21
70 B3-04 DO YOU ADJUST INDUCTORS.	32	31	35	33	29	49	14
71 B3-05 DO YOU REMOVE OR REPLACE INDUCTORS.	43	44	42	46	46	57	36
72 B3-06 DO YOU USE OR REFER TO INDUCTANCE.	37	39	28	42	38	46	21
73 B3-07 DO YOU USE OR REFER TO HENRIES.	27	28	26	30	31	41	7
74 B3-08 DO YOU USE OR REFER TO INDUCTIVE REACTANCE.	23	24	22	25	25	38	7
75 B3-09 DO YOU USE OR REFER TO COPPER LOSS IN INDUCTORS.	4	4	4	6	5	3	0
76 B3-10 DO YOU USE OR REFER TO HYSTERESIS LOSS IN INDUCTORS.	12	12	11	12	16	14	0
77 B3-11 DO YOU USE OR REFER TO EDDY CURRENT LOSS IN INDUCTORS.	8	7	11	9	11	5	0
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.	6	6	7	6	10	8	0
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.	6	5	8	4	10	11	0
80 B3-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS INVERSELY PROPORTIONAL TO ITS LENGTH.	5	5	5	4	6	11	0
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.	6	6	8	5	9	14	0
82 B3-16 DO YOU CALCULATE INDUCTANCE FOR PARTICULAR INDUCTORS USING FORMULAS.	6	6	5	7	8	8	0
83 B3-17 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTANCE IN SERIES.	8	8	7	10	9	14	0
84 B3-18 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN PARALLEL.	8	9	7	10	9	16	0
85 B3-19 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES-PARALLEL CIRCUITS.	8	8	7	10	9	14	0
86 B3-20 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEADS VOLTAGE IN AC INDUCTOR CIRCUITS.	13	14	11	14	17	19	0
87 B3-21 DO YOU CALCULATE INDUCTIVE REACTANCE.	8	8	11	9	10	14	0
88 B3-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTIVE REACTANCE IS DIRECTLY PROPORTIONAL TO FREQUENCY.	11	11	11	12	11	19	0
89 B3-23 DO YOU WORK WITH POWER INDUCTORS.	32	32	32	34	32	43	29
90 B3-24 DO YOU WORK WITH AUDIO FREQUENCY INDUCTORS.	10	11	8	14	9	14	7
91 B3-25 DO YOU WORK WITH RADIO FREQUENCY INDUCTORS.	11	11	11	15	7	19	7

ALTERNATING CURRENT

INDUCTORS AND INDUCTIVE REACTANCE

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

CY-TSK

	SPC 201	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207
C 92 C1-01 DO YOU WORK WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS IN YOUR PRESENT JOB.	79	79	78	86	75	70	100
C 93 C1-02 DO YOU INSPECT CAPACITORS.	79	80	74	87	78	81	86
C 94 C1-03 DO YOU CLEAN CAPACITORS.	62	63	58	70	63	57	50
C 95 C1-04 DO YOU ADJUST CAPACITORS.	57	57	57	61	47	78	57
C 96 C1-05 DO YOU TEST CAPACITORS.	66	70	54	66	70	73	71
C 97 C1-06 DO YOU DISCHARGE CAPACITORS.	70	72	61	78	87	73	74
C 98 C1-07 DO YOU REMOVE OR REPLACE CAPACITORS.	76	80	82	87	76	78	93
C 99 C1-08 DO YOU USE OR REFER TO DISTRIBUTED CAPACITANCE.	12	12	12	14	12	16	7
C 100 C1-09 DO YOU USE OR REFER TO ORBITAL STRESS OF ELECTRONS IN A DIELECTRIC.	3	3	4	3	4	8	0
C 101 C1-10 DO YOU USE OR REFER TO FARADS, MICROFARADS, OR PICOFARADS.	73	74	69	74	74	73	84
C 102 C1-11 DO YOU USE OR REFER TO CAPACITANCE.	71	73	60	76	72	70	79
C 103 C1-12 DO YOU USE OR REFER TO DIELECTRIC CONSTANT	13	13	14	11	14	19	7
C 104 C1-13 DO YOU USE OR REFER TO WORKING VOLTAGE RATING OF CAPACITORS	58	60	51	57	65	57	71
C 105 C1-14 DO YOU USE OR REFER TO CAPACITIVE REACTANCE	25	26	19	27	25	35	36
C 106 C1-15 DO YOU USE OR REFER TO CAPACITOR COLOR CODES	34	35	30	44	27	46	29
C 107 C1-16 DO YOU WORK WITH CAPACITORS IN DC CIRCUITS	82	83	80	92	78	78	100
C 108 C1-17 DO YOU WORK WITH CAPACITORS IN AC CIRCUITS	73	74	70	82	70	73	84
C 109 C1-18 DO YOU WORK WITH CAPACITORS IN CIRCUITS WITH BOTH DC AND AC	71	72	64	76	70	76	57
C 110 C1-19 DO YOU WORK WITH CAPACITORS IN DON'T REMEMBER WHICH CIRCUITS	16	17	12	24	10	24	21
C 111 C1-20 DO YOU CALCULATE CAPACITANCE FOR PARTICULAR CAPACITORS USING FORMULAS	10	9	11	11	8	16	0
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	5	5	5	9	5	8	0
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	5	5	7	7	5	8	0
C 114 C1-23 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES	17	18	14	22	17	24	7
C 115 C1-24 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN PARALLEL	17	18	14	21	17	22	7
C 116 C1-25 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES-PARALLEL CIRCUITS	15	15	14	17	14	22	7
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	25	26	42	25	23	38	29
C 118 C1-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEADS VOLTAGE IN AC CAPACITOR CIRCUITS	19	21	12	24	18	27	7
C 119 C1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITIVE REACTANCE IS INVERSELY PROPORTIONAL TO FREQUENCY	14	14	11	16	13	27	0
C 120 C1-29 DO YOU CALCULATE CAPACITIVE REACTANCE	9	9	8	11	9	16	0

CAPACITORS AND CAPACITIVE REACTANCE

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

0Y-TSK

SPC SPC SPC SPC SPC SPC SPC SPC

201 202 203 204 205 206 207

C 121 C1-30 DO YOU WORK WITH MOTOR-STATOR (VARIABLE) CAPACITORS
C 122 C1-31 DO YOU WORK WITH COMPRESSION (TRIMMER) CAPACITORS
C 123 C1-32 DO YOU WORK WITH ELECTROLYTIC (FIXED) CAPACITORS
C 124 C1-33 DO YOU WORK WITH PAPER (FIXED) CAPACITORS
C 125 C1-34 DO YOU WORK WITH MICA (FIXED) CAPACITORS
C 126 C1-35 DO YOU WORK WITH CERAMIC (FIXED) CAPACITORS
C 127 C1-36 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF CAPACITORS

C 128 C2-01 DO YOU WORK WITH TRANSFORMERS IN YOUR PRESENT JOB
C 129 C2-02 DO YOU INSPECT TRANSFORMERS
C 130 C2-03 DO YOU CLEAN TRANSFORMERS
C 131 C2-04 DO YOU ADJUST TRANSFORMERS
C 132 C2-05 DO YOU TROUBLESHOOT TRANSFORMERS
C 133 C2-06 DO YOU REMOVE OR REPLACE COMPLETE TRANSFORMERS
C 134 C2-07 DO YOU REMOVE OR REPLACE TRANSFORMER PARTS, SUCH AS THE PRIMARY WINDING

C 135 C2-08 DO YOU MAKE A DISTINCTION BETWEEN MUTUAL INDUCTANCE AND MUTUAL INDUCTANCE (M)
C 136 C2-09 DO YOU USE THE SYMBOL FOR MUTUAL INDUCTANCE, M
C 137 C2-10 DO YOU REFER TO OH USE THE COEFFICIENT OF COUPLING WHEN WORKING WITH TRANSFORMERS
C 138 C2-11 DO YOU CALCULATE TURNS RATIOS FOR TRANSFORMERS USING CURRENT OR VOLTAGE RATIOS

C 139 C2-12 DO YOU REFER TO REFLECTED IMPEDANCE WHEN WORKING WITH TRANSFORMERS
C 140 C2-13 DO YOU CALCULATE IMPEDANCE INTERACTIONS FOR TRANSFORMERS

C 141 C2-14 DO YOU WORK WITH AUTOTRANSFORMERS
C 142 C2-15 DO YOU WORK WITH POWER TRANSFORMERS
C 143 C2-16 DO YOU WORK WITH AUDIO TRANSFORMERS
C 144 C2-17 DO YOU WORK WITH RADIO FREQUENCY TRANSFORMERS
C 145 C2-18 DO YOU WORK WITH DON'T REMEMBER WHAT TYPE OF TRANSFORMERS

C 146 C2-19 DO YOU CHECK TRANSFORMERS FOR OPEN WINDINGS BY MEASURING RESISTANCE
C 147 C2-20 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING RESISTANCE

C 148 C2-21 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING OUTPUT VOLTAGES
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
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

C 151 C2-24 DO YOU REFER TO BASIC TRANSFORMER SCHEMATIC SYMBOLS FOR TRANSFORMERS

TRANSFORMERS

41 39 45 44 34 51 50
45 42 57 46 39 59 49
75 75 78 75 75 70 93
65 66 62 70 64 68 71
66 66 65 69 64 68 86
70 71 69 73 69 68 79
18 18 20 20 15 19 29

81 82 57 70 59 62 50
81 82 58 60 60 62 50
52 53 51 64 51 46 36
28 29 26 38 24 32 7
49 50 49 51 50 62 50
59 59 57 62 61 65 50
6 7 5 8 6 11 0

5 5 3 4 7 8 0
3 3 4 2 4 3 0
3 3 3 2 5 5 0
7 7 9 5 10 14 0

5 5 5 4 8 5 0
3 4 3 3 4 5 0

16 15 20 17 16 19 21
56 57 55 62 55 57 43
10 9 12 10 7 8 14
8 7 11 9 8 8 0
16 16 14 16 15 22 21

52 52 54 52 54 59 50
49 49 49 51 48 57 50
46 46 46 50 43 57 43

16 17 12 20 16 24 7
24 25 22 29 26 35 7

61 63 63 67 61 66 36

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		GPSM13																				
		201			202			203			204			205			206			207		
		SPC			SPC			SPC			SPC			SPC			SPC			SPC		
		201			202			203			204			205			206			207		
C 152 C2-25 DO YOU REFER TO MULTIPLE SECONDARY-WINDING SCHEMATIC SYMBOLS FOR TRANSFORMERS		49			51			45			53			49			62			36		
C 153 C2-26 DO YOU REFER TO MULTIPLE TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS		52			53			49			58			52			57			36		
C 154 C2-27 DO YOU REFER TO CENTER TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS		58			59			53			64			57			65			36		
C 155 C2-28 DO YOU REFER TO AIR CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS		31			32			46			42			27			30			7		
C 156 C2-29 DO YOU REFER TO IRON CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS		40			42			30			50			37			46			7		
C 157 C2-30 DO YOU REFER TO COMBINATIONS OF THE ABOVE SCHEMATIC SYMBOLS FOR TRANSFORMERS		43			43			45			50			41			41			43		
C 158 C2-31 DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING SCHEMATIC SYMBOLS		28			29			23			33			23			51			21		
C 159 C2-32 DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN TRANSFORMERS YOU WORK WITH		17			18			11			27			16			11			0		
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		15			16			14			15			18			22			0		
C 161 C2-34 DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN RATIOS FOR TRANSFORMERS		25			26			23			26			30			30			21		
C 162 C2-35 DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS USING TURNS RATIOS		10			10			11			10			11			16			0		
C 163 C2-36 DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS USING TURNS RATIOS		7			7			7			7			9			11			0		
C 164 C2-37 DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH THREE PHASE TRANSFORMERS		25			26			19			35			13			43			0		
C 165 C2-38 DO YOU INSPECT THREE PHASE TRANSFORMERS		23			23			22			31			11			41			0		
C 166 C2-39 DO YOU CLEAN OR LUBRICATE THREE PHASE TRANSFORMERS		18			17			14			26			9			22			0		
C 167 C2-40 DO YOU ADJUST THREE PHASE TRANSFORMERS		10			11			7			20			5			8			0		
C 168 C2-41 DO YOU TROUBLESHOOT THREE PHASE TRANSFORMERS		19			20			18			28			11			30			0		
C 169 C2-42 DO YOU REMOVE OR REPLACE COMPLETE THREE PHASE TRANSFORMERS		21			21			20			30			11			32			0		
C 170 C2-43 DO YOU REMOVE OR REPLACE THREE PHASE TRANSFORMER PARTS SUCH AS WINDINGS		4			4			4			7			4			3			0		
C 171 C3-01 DO YOU USE OR REFER TO PERMANENT MAGNETS		23			23			22			27			23			30			0		
C 172 C3-02 DO YOU USE OR REFER TO TEMPORARY MAGNETS		31			32			27			40			29			38			21		
C 173 C3-03 DO YOU USE OR REFER TO RETENTIVITY OF MAGNETIC MATERIALS		19			18			23			21			18			22			21		
C 174 C3-04 DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC MATERIALS		14			13			18			14			16			14			7		
C 175 C3-05 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS		18			18			18			21			18			22			0		
C 176 C3-06 DO YOU USE OR REFER TO RESIDUAL MAGNETISM		25			26			22			29			27			32			29		
C 177 C3-07 DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE OR FLUX		31			32			26			41			27			27			43		
C 178 C3-08 DO YOU USE OR REFER TO WEBER'S THEORY OF MAGNETISM		7			7			8			8			9			8			0		

MAGNETISM

MAGNETISM

DY-7SK

POLE OF A CURRENT CARRYING COIL

RCL CIRCUITS

WORKING WITH RCL CIRCUITS
AND CLEAN UP YOUR USE OF RESISTORS TO SAVE WHEN WORKING WITH RCL

CIRCUITS
PAGE 1-15 DO YOU USE OR PREFER TO COSINE WHEN WORKING WITH RCL

U 190 01-16-65 DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH MCL
CIRCUITS

0 191 01-07 DO YOU USE OR REFER TO WAYS WHEN WORKING WITH RCL

DO NOT USE OR REFER TO TRUE
POWER (PI) WHEN WORKING
WITH RCL CIRCUITS

WORKING WITH RCL CIRCUITS

WORKING WITH HCL CIRCUITS
DO YOU USE OR REFER TO APPARENT POWER (PA) WHEN

WORKING WITH RCL CIRCUITS
J 196 01-14 DO YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING

197 01-13 DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN

DO 198 01-14 DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH
HCL CIRCUITS

U 144 01-13 00 100 03E
HCL CIRCUITS

WORKING WITH ACL CIRCUITS

WORKING WITH RCL CIRCUITS
 0 202 01-18 DO YOU USE OR REFER TO BANDPASS REGION WHEN WORKING

0403 01-19 DO YOU USE OR REFER TO CIRCUIT WHEN WORKING WITH

PCT MBR'S RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

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

SPC SPC SPC SPC SPC SPC
201 202 203 204 205 206 207

21 19 27 16 22 24 21

21 20 23 17 22 24 21

10 9 14 6 12 19 7

9 8 14 6 12 16 7

12 11 16 8 15 19 14

3 3 4 3 4 5 0

4 4 5 2 6 5 7

5 5 7 3 8 8 7

4 4 5 3 6 3 7

5 4 8 1 10 3 7

44 43 47 41 51 54 43

40 39 42 41 45 46 36

35 34 39 36 39 41 29

26 27 23 29 30 32 7

37 37 36 34 45 46 36

36 36 35 34 46 38 29

36 37 41 35 43 54 36

35 34 35 33 43 38 36

26 26 24 24 32 22 21

23 23 23 20 29 24 14

15 15 15 10 20 16 7

11 11 11 9 14 16 7

18 17 22 17 18 35 29

15 13 20 11 18 22 21

15 14 19 13 16 22 21

15 13 20 13 16 16 14

21 22 18 22 24 32 21

14 16 9 14 15 22 7

18 18 15 16 22 22 14

13 13 11 14 12 16 7

FILTERS

SERIES AND PARALLEL RESONANCE
(TIME CONSTANTS)

POT MEMS RESPONDING ATESAT Y SELECTED GRPS

GPSM13 PAUF 11

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

JY-TSK

SPC SPC SPC SPC SPC SPC
201 202 203 204 205 206 207

U 259 U3-21 DON'T REMEMBER WHICH TYPE OF BASIC CIRCUIT
U 460 U3-22 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE
CAPACITANCE OR INDUCTANCE VALUES REQUIRED FOR SPECIFIC
FILTERS

E 461 E1-01 DO YOU WORK WITH COUPLING DEVICES IN YOUR PRESENT JOB
E 262 E1-02 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO
THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH MC
COUPLING

E 263 E1-03 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO
THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH
IMPEDANCE COUPLING

E 464 E1-04 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO
THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH
TRANSFORMER COUPLING

E 265 E1-05 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS
WHICH PERFORM MC COUPLING

E 266 E1-06 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS
WHICH PERFORM IMPEDANCE COUPLING

E 467 E1-07 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS
WHICH PERFORM TRANSFORMER COUPLING

E 468 E1-08 DO YOU WORK WITH DIRECTLY COUPLED CIRCUITS
E 469 E1-09 DO YOU WORK WITH CAPACITIVE-RESISTIVE COUPLED
CIRCUITS

E 470 E1-10 DO YOU WORK WITH CAPACITIVE-INDUCTIVE COUPLED
CIRCUITS

E 471 E1-11 DO YOU WORK WITH TRANSFORMER COUPLED CIRCUITS
E 272 E1-12 DON'T REMEMBER WHICH TYPE OF COUPLING CIRCUITS
TECHNIQUES OR INSPECT OR EVALUATE SOLDERED CONNECTIONS

E 273 E2-01 IN YOUR PRESENT JOB, DO YOU PERFORM SOLDERING
TECHNIQUES OR SELECT TYPE OF SOLDER TO USE

E 274 E2-02 DO YOU ADD FLUX TO CONNECTIONS
E 275 E2-03 DO YOU CLEAN CONNECTIONS USING SOLVENTS

E 476 E2-04 DO YOU STRIP INSULATION FROM WIRES
E 277 E2-05 DO YOU CONNECT OR DISCONNECT HEAT SINKS

E 278 E2-06 DO YOU BEND OR SHAPE WIRES OR LEADS
E 479 E2-07 DO YOU CUT WIRES

E 280 E2-08 DO YOU FILE OR SHAPE SOLDERING IRON TIPS
E 281 E2-09 DO YOU TIN SOLDERING IRON TIPS

E 282 E2-10 DO YOU CLEAN ELECTRICAL SURFACES USING ERASERS
E 483 E2-11 DO YOU TIN OR PRE-TIN CONDUCTORS

E 484 E2-12 DO YOU INSPECT SOLDERED CONNECTIONS
E 285 E2-13 DO YOU DESOLDER CONNECTIONS BY PICKING

E 486 E2-14 DO YOU DESOLDER CONNECTIONS BY PICKING
E 287 E2-15 DO YOU DESOLDER CONNECTIONS USING VACUUM DESOLDERING
TOOLS

E 488 E2-16 DO YOU CUT COMPONENT LEADS TO REMOVE COMPONENTS
E 289 E2-17 DO YOU CRUSH COMPONENTS FOR REMOVAL

COUPLING

SOLDERING

33	34	32	37	31	38	29
30	29	31	31	27	32	29
23	22	26	25	19	30	7
29	30	27	33	25	32	29
29	29	30	30	27	27	29
24	21	27	24	18	24	7
27	26	28	29	24	27	29
26	26	28	27	25	24	29
27	26	28	27	26	27	29
21	22	20	22	19	24	14
26	26	27	28	23	27	29
9	9	7	8	4	9	14
81	80	81	87	78	84	100
62	62	64	69	54	76	86
74	74	74	80	70	86	93
77	76	77	82	73	84	100
81	82	80	90	77	84	100
77	78	76	83	76	84	100
81	82	80	90	77	86	100
81	81	80	90	76	86	100
63	63	62	66	61	76	79
80	80	80	88	75	84	100
81	81	80	90	76	84	100
77	78	74	89	70	86	86
78	79	73	89	74	84	93
82	82	81	90	79	86	100
69	69	66	74	67	76	79
71	72	68	80	65	81	100
68	69	62	77	63	81	86
24	21	32	23	23	30	36

PCT MANS RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

SPC SPC SPC SPC SPC SPC SPC SPC

E 291 E2-19 DO YOU MAKE HARDWIRE CONNECTIONS
E 292 E2-20 DO YOU MAKE PRINTED CIRCUIT BOARD CONNECTIONS
E 293 E2-21 DO YOU SOLDER PASSIVE COMPONENTS SUCH AS RESISTORS OR CAPACITORS ON PRINTED CIRCUIT BOARDS

E 294 E2-22 DO YOU SOLDER ACTIVE COMPONENTS SUCH AS SOLID-STATE DIODES OR TRANSISTORS ON PRINTED CIRCUIT BOARDS

E 295 E3-01 DO YOU WORK WITH RELAYS ON YOUR PRESENT JOB

E 296 E3-02 DO YOU ADJUST RELAYS

E 297 E3-03 DO YOU CLEAN RELAYS

E 298 E3-04 DO YOU INSPECT RELAYS

E 299 E3-05 DO YOU REMOVE OR REPLACE COMPLETE RELAYS

E 300 E3-06 DO YOU REMOVE OR REPLACE PARTS OR RELAYS

E 301 E3-07 DO YOU TROUBLESHOOT RELAYS

E 302 E3-08 DO YOU STRAIGHTEN RELAY CONTACTS

E 303 E3-09 DO YOU PERFORM TASKS ON RELAY CONTACTS

E 304 E3-10 DO YOU PERFORM TASKS ON RELAY COILS

E 305 E3-11 DO YOU PERFORM TASKS ON RELAY COILS

E 306 E3-12 DO YOU PERFORM TASKS ON RELAY ARMATURES

E 307 E3-13 DO YOU PERFORM TASKS ON RELAY SPRINGS

E 308 E3-14 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY OPEN (NO) SCHEMATIC SYMBOLS FOR RELAYS

E 309 E3-15 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY CLOSED (NC) SCHEMATIC SYMBOLS FOR RELAYS

E 310 E3-16 DO YOU USE OR REFER TO SINGLE POLE, DOUBLE THROW (SPDT) SCHEMATIC SYMBOLS FOR RELAYS

E 311 E3-17 DO YOU USE OR REFER TO DOUBLE POLE, DOUBLE THROW (DPDT) SCHEMATIC SYMBOLS FOR RELAYS

E 312 E3-18 DO YOU USE OR REFER TO OTHER RELAY SYMBOLS SCHEMATIC SYMBOLS FOR RELAYS

E 313 E3-19 DO YOU CHECK ELECTRICAL CONTINUITY OF COILS BY MEASURING RESISTANCE

E 314 F1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH MICROPHONES

E 315 F1-02 DO YOU INSPECT MICROPHONES

E 316 F1-03 DO YOU CLEAN MICROPHONES

E 317 F1-04 DO YOU OPERATE MICROPHONES

E 318 F1-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT PARTS OR MICROPHONES

E 319 F1-06 DO YOU TROUBLESHOOT DOWN TO MICROPHONE PARTS

E 320 F1-07 DO YOU REMOVE OR REPLACE COMPLETE MICROPHONES

E 321 F1-08 DO YOU REMOVE OR REPLACE MICROPHONE PARTS

E 322 F1-09 DO YOU PERFORM TASKS ON CARBON MICROPHONES

E 323 F1-10 DO YOU PERFORM TASKS ON CAPACITOR MICROPHONES

E 324 F1-11 DO YOU PERFORM TASKS ON CRYSTAL MICROPHONES

E 325 F1-12 DO YOU PERFORM TASKS ON DYNAMIC MICROPHONES

E 326 F1-13 DO YOU PERFORM TASKS ON VELOCITY RIBBON MICROPHONES

RELAYS

MICROPHONES

78	79	74	89	73	81	93	
74	75	68	78	75	78	100	
71	73	65	75	75	73	100	
71	73	64	75	75	68	100	
71	71	73	86	64	62	64	
41	43	34	68	33	19	21	
58	59	55	80	51	41	43	
67	67	69	88	59	49	71	
71	72	69	90	66	59	57	
33	36	22	60	26	16	14	
65	67	58	84	61	57	43	
53	54	47	74	46	30	50	
49	49	47	68	44	32	36	
14	14	11	25	9	16	7	
20	21	16	35	14	19	14	
26	28	19	42	21	19	14	
32	33	28	45	34	19	41	
60	61	54	73	55	51	50	
59	61	54	73	54	54	50	
58	59	54	70	53	54	43	
57	58	54	71	50	51	43	
50	50	51	67	43	43	43	
56	56	57	72	47	51	50	
3	4	3	0	4	11	7	
3	4	1	0	4	11	7	
3	4	0	0	3	11	7	
3	3	3	1	3	11	7	
3	3	3	0	3	8	7	
1	1	0	0	1	3	0	
3	3	3	1	4	8	0	
1	1	0	0	1	3	0	
1	1	1	0	2	3	0	
0	0	0	0	0	0	0	
0	0	1	0	0	0	0	
2	2	1	0	2	8	0	
0	0	0	0	0	0	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

0Y-TSK

361 G1-08 DO YOU USE OR REFER TO THE GENERAL RULE THAT
TEMPERATURE CAN AFFECT THE OPERATION OF DIODES
362 G1-09 DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO
OTHER ELECTRONIC COMPONENTS, SUCH AS RESISTORS, BASED ON
THEIR PHYSICAL APPEARANCE

3 363 G1-10 DO YOU REFER TO OR DO YOU DETERMINE THE GENERAL EFFECTS OF COPING ON CURRENT FLOW

U 364 G1-11 DO YOU USE OR REFER TO MEASUREMENTS OF FORWARD BIAS RESISTANCE

RESISTANCE

RESISTANCE
JAS 61-12 DO YOU USE OR REFER TO DIODE COLOR CODING

365 91-12 DO YOU USE OR REFER TO VIBRATOR COUPLING
366 G1-13 DO YOU USE OR REFER TO CENTRIFUGAL FORCE OF AN
367 ELECTRON IN ORBIT AROUND A NUCLEUS

ELECTRON IN ORBIT AROUND A NUCLEUS

367 61-14 DO YOU USE OR REFER TO CENTRIPETAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS

ELECTRON IN ORBIT AROUND A NUCLEUS

368 G-15 DO YOU USE OR REFER TO DIODE NUMBERING SYSTEM, SUCH AS IN 538

AS IN 538

Q 69 51-16 DO YOU USE OR REFER TO KINETIC ENERGY OF AN ELECTRON MOVING IN ORBIT

MOVING IN ORBIT

MOVING IN ORBIT
370 GI-17 DO YOU USE OR REFER TO POTENTIAL ENERGY OF AN
ELECTRON MOVING IN ORBIT

ELECTRON MOVING IN ORBIT

371 61-18 00 YOU USE OR REFER TO MEASUREMENTS OF REVERSE BIAS
ELECTRON MOVING IN ORBIT
RESISTANCE

RESISTANCE

G 372 G1-19 DO YOU USE OR REFER TO NUMBER OF ELECTRONS IN A RESISTANCE PARTICULAR SHELL OR UNIT

PARTICULAR SHELL OR UNIT

6 373 61-20 DO YOU USE OR REFER TO PERMISSIBLE ENERGY LEVELS OF PARTICULAR SHELL OR ORBITAL ORBITAL ELECTRON?

AN ORBITING ELECTRON

U 374 61-21 DO YOU USE OR REFER TO FORBIDDEN ENERGY LEVELS OF AN
AN ORBITING ELECTRON
ORBITING ELECTRON

QUALITY ELECTRON

6 375 G1-22 DO YOU USE OR REFER TO VALENCE ELECTRONS (THOSE IN THE OUTERMOST SHELL)

THE OUTERMOST SHELL

6. 376 G1-23 DO YOU USE OR REFER TO ATOMIC NUMBER (TOTAL NUMBER OF THE OUTERMOST SHELL) ELECTRONS IN ATOM

MOBILE 501 50011313

9 377 61-24 DO YOU USE OR REFER TO SYMBOLS ON THE DIODE WHICH
ELECTRONS IN ATOM)

INDICATE THE CATHODE END

378 61-45 DO YOU NEED TO KNOW WHICH MATERIALS ARE USED IN THE CONSTRUCTION OF DIODES SUCH AS GERMANIUM OR SILICON

CONSTRUCTION OF BIOLOGICAL

Q 379 G1-26 DO YOU NEED TO KNOW THAT SEMICONDUCTORS HAVE NEGATIVE COEFFICIENTS OF RESISTANCE (AS TEMPERATURE INCREASES)?

TEMPERATURE COEFFICIENTS OF RES

INCREASES RESISTANCE DECREASES)
TEMPERATURE COEFFICIENT OF RESISTANCE (AS TEMPERATURES

100-443887-1000

6 380 51-27 DO YOU USE OR REFER TO PN JUNCTION, DIODE
CHARACTERISTIC CURVES, SUCH AS VOLTAGE - CURRENT
CHARACTERISTIC CURVES, PERHAPS YOU DO THIS TO IDENTIFY

CHARACTERISTIC CURVES (PERHAPS YOU DO THIS TO IDENTIFY POINTS OF STRUCTURAL BREAKDOWN OR OPERATING REGIONS)

POINTS OF STRUCTURAL AREA

6 381 51-28 DO YOU DETERMINE WHETHER PN JUNCTION DIODES ARE
FORWARD BIASED OR REVERSE BIASED WHEN YOU READ OR

FORWARD BIASED OR REVERSE

3. 382 61-29 00 YOU USE OR REFER TO VALENCE BAND IN SEMICONDUCTOR

6 382 61-29 00 70

STOICHIOMETRY

57014714

SPC 201	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207
51	53	46	62	47	54	50
71	72	68	80	77	65	86
10	10	8	12	8	16	7
59	61	51	62	65	62	64
33	35	27	45	31	32	21
2	1	4	0	4	3	0
2	1	4	0	4	3	0
58	60	53	57	62	57	74
2	2	4	0	5	3	0
3	2	4	0	6	3	0
59	60	53	56	67	62	57
3	2	4	1	5	3	0
1	1	4	0	4	0	0
1	1	4	0	4	0	0
3	2	4	3	4	0	0
2	2	4	1	5	0	0
69	71	62	76	73	68	93
22	22	22	24	22	19	7
26	26	26	30	25	30	21
11	11	11	12	11	11	7
48	49	46	50	46	62	50
5	5	4	3	7	8	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UY-TSK

	SPC 201	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207
383 G1-30 DO YOU USE OR REFER TO FORBIDDEN BAND IN SEMICONDUCTOR MATERIALS	3	2	4	3	3	5	0
384 G1-31 DO YOU USE OR REFER TO CONDUCTION BAND IN SEMICONDUCTOR MATERIALS	5	5	5	6	5	8	0
385 G1-32 DO YOU USE OR REFER TO COVALENT BONDING IN SEMICONDUCTOR MATERIALS	4	4	4	4	4	6	0
386 G1-33 DO YOU USE OR REFER TO ELECTRON-HOLE PAIR CREATED IN SEMICONDUCTORS	4	4	4	2	6	8	0
387 G1-34 DO YOU USE OR REFER TO ELECTRON FLOW OR HOLE FLOW IN SEMICONDUCTORS	12	12	11	10	15	14	7
388 G1-35 DO YOU USE OR REFER TO DONOR IMPURITY IN SEMICONDUCTORS	3	3	4	2	6	5	0
389 G1-36 DO YOU USE OR REFER TO ACCEPTOR IMPURITY IN SEMICONDUCTORS	4	4	4	2	7	5	0
390 G1-37 DO YOU USE OR REFER TO P-TYPE SEMICONDUCTOR MATERIAL	28	31	19	29	31	43	21
391 G1-38 DO YOU USE OR REFER TO N-TYPE SEMICONDUCTOR MATERIAL	28	31	19	29	31	43	21
392 G1-39 DO YOU USE OR REFER TO MAJORITY CARRIERS IN SEMICONDUCTORS	5	5	5	4	8	11	0
393 G1-40 DO YOU USE OR REFER TO MINORITY CARRIERS IN SEMICONDUCTORS	5	5	5	4	8	11	0
394 G1-41 DO YOU USE OR REFER TO JUNCTION RECOMBINATION IN SEMICONDUCTORS	3	3	5	2	5	5	0
395 G1-42 DO YOU USE OR REFER TO DEPLETION REGION IN SEMICONDUCTORS	5	4	7	3	6	11	0
396 G1-43 DO YOU USE OR REFER TO RELATIONSHIP BETWEEN BARRIER WIDTH AND DIFFERENCE OF POTENTIAL	5	5	7	5	7	8	0
397 G1-44 DO YOU USE OR REFER TO THE 10:1 BACK TO FRONT RESISTANCE RATIO FOR DIODES	54	52	59	51	59	54	57
398 G1-45 DO YOU USE OR REFER TO BARRIER HEIGHT IN SEMICONDUCTORS	3	3	4	2	5	5	0
399 G1-46 DO YOU USE OR REFER TO DIODE SUBSTITUTION INFORMATION	49	50	43	53	48	49	64
400 G1-47 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD CURRENT DIODE RATINGS	18	17	20	14	19	30	7
401 G1-48 DO YOU USE OR REFER TO PEAK RECURRENT FORWARD CURRENT DIODE RATINGS	14	14	16	13	14	24	7
402 G1-49 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT DIODE RATINGS	16	15	22	13	16	27	14
403 G1-50 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE DIODE RATINGS	24	23	26	16	30	32	21
404 G2-01 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB.	76	76	76	74	76	84	100
405 G2-02 DO YOU INSPECT TRANSISTORS	73	73	70	73	75	78	93
406 G2-03 DO YOU REMOVE OR REPLACE TRANSISTORS	71	72	66	69	75	81	100
407 G2-04 DO YOU CHECK TRANSISTORS USING AN INSTRUMENT	71	71	69	66	79	78	100
408 G2-05 DO YOU USE OR REFER TO EMITTER - BASE (EB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	68	69	65	61	77	78	86
409 G2-06 DO YOU USE OR REFER TO COLLECTOR - BASE (CB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	68	69	64	61	75	78	86

TRANSISTORS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DT-TSK

	SPC 201	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207
G 410 G2-07 DO YOU USE OM REFER TO EMITTER - COLLECTOR (EC) RESISTANCE MEASUREMENTS	68	70	62	61	76	78	86
G 411 G2-08 DO YOU USE OM REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE EMITTER - BASE JUNCTION	19	20	14	12	24	32	21
G 412 G2-09 DO YOU USE OM REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE COLLECTOR - BASE JUNCTION	18	19	14	11	23	27	21
G 413 G2-10 DO YOU USE OM REFER TO THE PHYSICAL SIZE OF THE TRANSISTOR STRUCTURE (COLLECTOR, BASE AND EMITTER)	38	39	36	37	41	46	57
G 414 G2-11 DO YOU USE OM REFER TO LEAKAGE CURRENT (ICBO) IN A TRANSISTOR	18	16	23	14	18	24	7
G 415 G2-12 DO YOU USE OM REFER TO TRANSISTOR SCHEMATIC SYMBOLS	76	76	76	74	80	78	100
G 416 G2-13 DO YOU USE OM REFER TO TRANSISTOR NOTATION SUCH AS Q1, Q2, Q3, ETC	75	76	74	72	79	84	100
G 417 G2-14 DO YOU USE OM REFER TO TRANSISTOR SUBSTITUTION INFORMATION	55	56	54	52	60	57	86
G 418 G2-15 DO YOU USE OM REFER TO THE GENERAL RULE THAT THE TRANSISTOR BASE CURRENT IS NORMALLY SIGNIFICANTLY SMALLER THAN THE EMITTER CURRENT IE (USUALLY IE BEING 2 TO 8 PERCENT OF IE)	26	28	18	23	31	32	29
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	40	40	41	34	47	41	57
G 420 G2-17 DO YOU USE THE GENERAL RULE THAT LEAKAGE CURRENT (ICBO) IN A TRANSISTOR INCREASES AS TEMPERATURE INCREASES	20	21	18	23	24	22	0
G 421 G2-18 DO YOU USE OM REFER TO TRANSISTOR CHARACTERISTIC CURVES	13	13	12	11	15	8	14
G 422 G2-19 DO YOU USE OM REFER TO BETA TRANSISTOR GAINS	11	11	12	10	14	5	14
G 423 G2-20 DO YOU USE OM REFER TO ALPHA TRANSISTOR GAINS	8	7	9	7	11	5	14
G 424 G2-21 DO YOU USE OM REFER TO GAMMA TRANSISTOR GAINS	7	6	9	5	11	5	14
G 425 G2-22 DO YOU CALCULATE BETA TRANSISTOR GAINS	5	4	7	5	5	3	0
G 426 G2-23 DO YOU CALCULATE ALPHA TRANSISTOR GAINS	3	3	5	3	5	3	0
G 427 G2-24 DO YOU CALCULATE GAMMA TRANSISTOR GAINS	3	2	5	1	5	3	0
G 428 G3-01 DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR PRESENT JOB	42	38	59	35	45	51	71
G 429 G3-02 DO YOU INSPECT TRANSISTOR AMPLIFIERS	41	37	57	34	43	46	71
G 430 G3-03 DO YOU ALIGN OR ADJUST TRANSISTOR AMPLIFIERS	35	31	53	30	34	43	50
G 431 G3-04 DO YOU TROUBLESHOOT TO THE AMPLIFIER CIRCUIT LEVEL	41	37	55	35	42	49	64
G 432 G3-05 DO YOU TROUBLESHOOT TO AMPLIFIER COMPONENTS	37	35	47	30	43	46	64
G 433 G3-06 DO YOU REMOVE OR REPLACE THE COMPLETE AMPLIFIER	36	31	57	34	32	46	57
G 434 G3-07 DO YOU REMOVE OR REPLACE AMPLIFIER COMPONENTS	36	33	47	28	39	46	71
G 435 G3-08 DO YOU USE OM REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A CHANGE IN BASE CURRENT	41	21	19	17	28	24	29
G 436 G3-09 DO YOU USE OM REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A SPECIFIC CHANGE IN BASE CURRENT	10	10	8	9	11	19	7

TRANSISTOR AMPLIFIERS

PCT MEM'S RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

GPSM13 PAGE 18

04-TSK

	SPC 201	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207
G 454 G3-27 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH THERMISTOR STABILIZATION	14	13	19	11	16	22	7
G 455 G3-28 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH FORWARD BIAS DIODE STABILIZATION	19	17	24	15	23	22	14
G 456 G3-29 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH REVERSE BIAS DIODE STABILIZATION	18	17	23	14	23	24	14
G 457 G3-30 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH DOUBLE DIODE STABILIZATION	14	12	22	9	16	24	7
G 458 G3-31 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM EMITTER (SWAPPING) RESISTOR STABILIZATION	24	22	31	17	28	32	21
G 459 G3-32 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM SELF-BIAS STABILIZATION	21	18	30	13	26	27	14
G 460 G3-33 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THERMISTOR STABILIZATION	18	16	26	12	19	30	7
G 461 G3-34 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM FORWARD BIAS DIODE STABILIZATION	23	22	28	18	29	30	14
G 462 G3-35 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM REVERSE BIAS DIODE STABILIZATION	23	21	27	18	29	27	14
G 463 G3-36 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM DOUBLE DIODE STABILIZATION	17	14	26	12	19	22	7
G 464 G3-37 DO YOU IDENTIFY AMPLITUDE DISTORTION FOR TRANSISTOR CIRCUITS	22	20	27	19	27	22	21
G 465 G3-38 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF AMPLITUDE DISTORTION	26	23	36	18	34	27	29
G 466 G3-39 DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS	20	21	19	15	30	19	7
G 467 G3-40 DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS	17	17	19	13	27	16	7
G 468 G3-41 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF PHASE DISTORTION	17	17	16	14	25	16	14
G 469 G3-42 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF FREQUENCY DISTORTION	19	19	18	15	25	19	14
G 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	8	8	11	6	14	8	0
G 471 G3-44 DO YOU DETERMINE THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS	10	9	11	9	11	14	7
G 472 G3-45 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	9	8	15	9	11	5	0
G 473 G3-46 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	26	23	35	24	32	19	14
G 474 G3-47 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY CIRCUITS	15	13	24	12	18	19	7
G 475 G3-48 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	13	11	19	10	17	11	7

TASK GROUP SUMMARY
PERCENT MEMBERS PERK

PERCENT MEMBERS PERFORMING

UY-TSK

[illegible]

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Dy-75K

[illegible]

TSA GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UY-TSK

SPC SPC SPC SPC SPC SPC SPC SPC
201 202 203 204 205 206 207

I 548 11-10 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN MC
NETWORKS
I 549 11-11 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN
CRYSTALS
I 550 11-12 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN DON'T
REMEMBER WHICH TYPE OF FDU
I 551 11-13 DO YOU WORK WITH ASTABLE MULTIVIBRATORS
I 552 11-14 DO YOU WORK WITH MONOSTABLE MULTIVIBRATORS
I 553 11-15 DO YOU WORK WITH BISTABLE MULTIVIBRATORS
I 554 11-16 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE
MULTIVIBRATORS

I 555 12-01 DO YOU WORK WITH LIMITERS OR CLAMPERS IN YOUR
PRESENT JOB

LIMITERS AND CLAMPERS

I 556 12-02 DO YOU WORK WITH SERIES DIODE LIMITERS
I 557 12-03 DO YOU WORK WITH SHUNT DIODE LIMITERS
I 558 12-04 DO YOU WORK WITH LIMITERS WITH BIAS
I 559 12-05 DO YOU WORK WITH ZENER DIODE LIMITERS
I 560 12-06 DO YOU WORK WITH TRANSISTOR LIMITERS
I 561 12-07 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF LIMITERS
I 562 12-08 DO YOU WORK WITH BASIC DIODE CLAMPING CIRCUITS
I 563 12-09 DO YOU WORK WITH DIODE CLAMPING CIRCUITS WITH BIAS
I 564 12-10 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF CLAMPING
CIRCUIT

I 565 13-01 IN YOUR PRESENT JOB, DO YOU WORK ON EQUIPMENT WHICH
CONTAINS ELECTRON TUBES

ELECTRON TUBES

I 566 13-02 DO YOU CHECK ELECTRON TUBES TO SEE IF THEY ARE GOOD
I 567 13-03 DO YOU USE TUBF TESTERS TO CHECK ELECTRON TUBES
I 568 13-04 DO YOU USE MULTIMETERS TO CHECK ELECTRON TUBES
I 569 13-05 DO YOU USE SCOPES TO CHECK ELECTRON TUBES
I 570 13-06 DO YOU USE SUBSTITUTION TO CHECK ELECTRON TUBES
I 571 13-07 DO YOU USE OR REFER TO CUTOFF
I 572 13-08 DO YOU USE OR REFER TO PEAK INVERSE VOLTAGE RATING
I 573 13-09 DO YOU USE OR REFER TO PEAK CURRENT RATING
I 574 13-10 DO YOU USE OR REFER TO TRANSIT TIME
I 575 13-11 DO YOU USE OR REFER TO PLATE DISSIPATION RATING
I 576 13-12 DO YOU USE OR REFER TO SATURATION
I 577 13-13 DO YOU USE OR REFER TO DC PLATE RESISTANCE
I 578 13-14 DO YOU COMPUTE ACTUAL VALUES OF THE DC PLATE
RESISTANCE FOR ELECTRON TUBES

I 579 13-15 DO YOU USE OR REFER TO PLATE VOLTAGE
I 580 13-16 DO YOU USE OR REFER TO PLATE CURRENT
I 581 13-17 DO YOU USE OR REFER TO GRID VOLTAGE
I 582 13-18 DO YOU USE OR REFER TO GRID CURRENT
I 583 13-19 DO YOU USE OR REFER TO CATHODE VOLTAGE
I 584 13-20 DO YOU USE OR REFER TO CATHODE CURRENT
I 585 13-21 DO YOU USE OR REFER TO THE THRODE AMPLIFICATION
FACTOR (THE AMPLIFICATION FACTOR FOR TRIODES IS DEFINED AS
THE RATIO OF CHANGE IN PLATE VOLTAGE TO A CHANGE IN GRID
VOLTAGE)

39 41 35 38 47 32 36
32 31 34 34 34 27 43
21 21 23 22 20 27 50
48 47 54 49 46 49 43
58 58 55 59 60 59 50
63 64 59 67 62 65 57
9 6 14 10 4 11 21

43 42 43 39 47 57 36

31 32 31 31 34 41 7
30 29 32 32 31 38 14
26 24 32 27 25 32 14
33 32 36 32 37 38 21
28 27 31 28 31 32 14
13 12 15 10 11 30 29
29 29 32 30 33 27 21
25 23 32 24 46 24 14
14 13 19 8 14 32 29

33 35 23 47 12 27 0

26 31 9 61 11 19 0
19 24 3 50 6 3 0
14 16 9 29 9 8 0
19 21 12 42 8 11 0
26 30 11 62 7 16 0
7 8 4 15 4 3 0
4 4 3 8 1 5 0
3 4 3 8 0 5 0
3 4 1 9 0 5 0
2 3 1 5 0 5 0
6 7 3 12 2 5 0
4 4 4 3 9 1 5 0
1 1 0 2 0 3 0

16 18 7 35 7 5 0
11 13 4 25 4 5 0
15 18 7 35 7 5 0
11 13 4 25 4 5 0
15 17 7 33 7 5 0
11 14 4 25 4 5 0
3 3 1 7 1 0 0

PCT MERS RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK											
		SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
		201	202	203	204	205	206	207					
1 586 13-22 DO YOU CALCULATE ACTUAL VALUES OF TRIODE AMPLIFICATION FACTORS		1	1	0	1	1	0	0					
1 587 13-23 DO YOU USE OR REFER TO MULTIGRID (TETRODE, PENTODE, ETC) AMPLIFICATION FACTORS		2	3	0	5	1	3	0					
1 588 13-24 DO YOU USE OR REFER TO ELECTRON TUBE TRANSDUCTANCE (G, WHICH IS MEASURED IN MHOS)		1	1	1	2	2	0	0					
1 589 13-25 DO YOU CALCULATE ACTUAL VALUES OF ELECTRON TUBE TRANSDUCTANCES		1	1	0	1	1	0	0					
1 590 13-26 DO YOU USE OR REFER TO THE ELECTRON TUBE PARAMETER CALLED AC PLATE RESISTANCE		1	1	1	3	1	0	0					
1 591 13-27 DO YOU CALCULATE ACTUAL VALUES OF AC PLATE RESISTANCE		1	1	0	2	1	0	0					
1 592 13-28 DO YOU USE OR REFER TO ELECTRON TUBE INTERELECTRODE CAPACITANCE		2	2	1	3	1	3	0					
1 593 13-29 DO YOU USE OR REFER TO CHARACTERISTIC CURVES IN YOUR WORK WITH ELECTRON TUBES		1	1	0	2	1	3	0					
1 594 13-30 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE VOLTAGE FOR A SPECIFIED BIAS		2	2	1	4	1	3	0					
1 595 13-31 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE CURRENT FOR A SPECIFIED BIAS		2	2	1	3	1	3	0					
1 596 13-32 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR CUTOFF		3	3	0	7	1	3	0					
1 597 13-33 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR SATURATION		2	3	0	6	1	3	0					
1 598 13-34 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER GAIN		11	11	8	20	6	5	0					
1 599 13-35 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER EFFICIENCY		7	7	4	10	6	5	0					
1 600 13-36 DO YOU USE TEST TUBE CHECKERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN		13	16	1	31	6	3	0					
1 601 13-37 DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN		9	9	7	18	5	5	0					
1 602 13-38 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN		11	12	8	24	3	5	0					
1 603 13-39 DO YOU USE CHARACTERISTIC CURVES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN		2	3	1	4	1	5	0					
1 604 13-40 DO YOU CALCULATE ANY ELECTRON TUBE CAPACITANCES SUCH AS INPUT CAPACITANCE		0	0	0	0	0	0	0					
1 605 13-41 DO YOU USE OR REFER TO TUBE SOCKET NOTATION		22	25	8	54	6	11	0					
1 606 13-42 DO YOU USE OR REFER TO PIN NUMBERING SYSTEMS		23	26	11	53	8	14	0					
1 607 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		1	2	0	3	1	3	0					
1 608 13-44 DO YOU USE OR REFER TO TUBE SUBSTITUTION MATERIAL SUCH AS MANUALS OR CHARTS		13	14	5	31	4	3	0					
1 609 13-45 DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS IN YOUR PRESENT JOB		16	17	11	37	4	0	0					
1 610 13-46 DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS		4	5	0	9	3	0	0					

ELECTRON TUBE AMPLIFIERS
AND CIRCUITS

PC1 10'S RESPONDING 'YES' BY SELECTED GND'S

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UY-TSK

	SPC 201	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207
J 611 J1-03 DO YOU TROUBLESHOOT OR REPAIR PHASE AMPLIFIERS	2	2	1	5	0	0	0
J 612 J1-04 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	7	8	3	14	4	0	0
J 613 J1-05 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	3	4	1	6	2	0	0
J 614 J1-06 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	4	5	1	8	4	0	0
J 615 J1-07 DO YOU TROUBLESHOOT OR REPAIR DON'T KNOW WHICH TYPE OF AMPLIFIER	6	7	5	16	2	0	0
J 616 J2-01 DO YOU WORK WITH GAS TUBES (NOT CATHODE OR COLD CATHODE)	15	16	9	35	4	0	14
J 617 J2-02 DO YOU WORK WITH CATHODE-RAY TUBES	31	31	34	51	16	32	14
J 618 J2-03 DO YOU USE OR REFER TO THE CHARACTERISTICS OF BEAM POWER TUBES	4	5	0	10	4	0	0
J 619 J2-04 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH BEAM POWER TUBES ARE USED	6	7	1	13	4	0	0
J 620 J2-05 DO YOU USE OR REFER TO THE CHARACTERISTICS OF TETRATHONS	7	9	0	22	1	0	0
J 621 J2-06 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH TETRATHONS ARE USED	10	12	1	30	1	0	0
J 622 J2-07 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTRON GUNS OF CATHODE-RAY TUBES (CRT)	24	25	22	42	13	24	14
J 623 J2-08 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROMAGNETIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)	23	22	24	38	13	22	14
J 624 J2-09 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)	23	23	22	39	13	16	14
J 625 J2-10 DO YOU USE OR REFER TO PHOSPHOR SCREENS	25	25	23	42	15	24	21
J 626 J2-11 DO YOU USE OR REFER TO AQUADAG COATINGS	20	18	26	36	9	14	14
J 627 J2-12 DO YOU USE OR REFER TO ELECTRON OPTICS	9	9	9	17	6	3	7
J 628 J2-13 DO YOU USE OR REFER TO PERSISTENCE	15	14	18	30	5	11	14
J 629 J2-14 DO YOU USE OR REFER TO DECAY TIMES	11	12	9	23	4	11	14
J 630 J2-15 DO YOU USE OR REFER TO PHOSPHORESCENCE	11	12	8	21	6	14	7
J 631 J2-16 DO YOU USE OR REFER TO PHOSPHORESCENCE	18	18	16	33	8	19	7
J 632 J3-01 DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	18	20	11	7	32	22	0
J 633 J3-02 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	11	13	5	3	19	19	0
J 634 J3-03 DO YOU PERFORM TASKS ON FREQUENCY MIXERS	10	12	4	2	19	16	0
J 635 J3-04 DO YOU USE OR REFER TO THE HETERODYNING OF SIGNALS IN YOUR WORK WITH TRANSMIT OR RECEIVE SYSTEMS	10	13	1	0	25	8	0
J 636 J3-05 DO YOU PERFORM TASKS ON REACTANCE MODULATORS	3	3	0	1	4	8	0
J 637 J3-06 DO YOU PERFORM TASKS ON MODULATED OSCILLATORS	9	11	1	3	18	14	0
K 638 K1-01 DO YOU WORK ON AM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	1	1	1	2	1	0	0
K 639 K1-02 DO YOU INSPECT AM TRANSMIT OR RECEIVE SYSTEMS	1	1	1	1	1	0	0
K 640 K1-03 DO YOU CLEAN AM TRANSMIT OR RECEIVE SYSTEMS	1	1	0	1	1	0	0
K 641 K1-04 DO YOU ALIGN OR ADJUST AM TRANSMIT OR RECEIVE SYSTEMS	1	1	1	1	1	1	0

SPECIAL PURPOSE ELECTRON TUBES

HETERODYNING, MODULATION, AND DEMODULATION

AM SYSTEMS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

	SPC 201	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207
K 642 KI-05 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE SYSTEMS	1	1	0	2	1	0	0
K 643 KI-06 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE COMPONENTS	1	1	0	0	1	0	0
K 644 KI-07 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE SYSTEMS	1	1	0	1	1	0	0
K 645 KI-08 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE COMPONENTS	1	1	0	0	1	0	0
K 646 KI-09 DO YOU PERFORM TASKS ON RF OSCILLATORS	1	1	0	1	1	0	0
K 647 KI-10 DO YOU PERFORM TASKS ON RF AMPLIFIERS	1	1	0	1	1	0	0
K 648 KI-11 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	1	1	0	1	1	0	0
K 649 KI-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS	1	1	0	1	1	0	0
K 650 KI-13 DO YOU PERFORM TASKS ON LOCAL OSCILLATORS	1	1	0	1	1	0	0
K 651 KI-14 DO YOU PERFORM TASKS ON IF AMPLIFIERS	1	1	0	1	1	0	0
K 652 KI-15 DO YOU PERFORM TASKS ON DETECTORS	1	1	0	1	1	0	0
K 653 KI-16 DO YOU PERFORM TASKS ON DON'T REMEMBER WHICH AM STAGE	1	1	0	1	1	0	0
K 654 KI-17 DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN TRANSMITTERS	1	1	1	1	1	0	0
K 655 KI-18 DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN TRANSMITTERS	1	1	1	0	1	0	0
K 656 KI-19 DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS	1	1	0	2	0	0	0
K 657 KI-20 DO YOU USE OR REFER TO SELECTIVITY OF RECEIVERS	1	1	0	2	0	0	0
K 658 KI-21 DO YOU USE OR REFER TO 2ND HARMONIC DISTORTION	0	0	0	0	0	3	0
K 659 KI-22 DO YOU USE OR REFER TO BANDPASS DISTORTION	0	0	0	0	0	0	0
K 660 KI-23 DO YOU USE OR REFER TO SQUARE LAW DISTORTION	0	0	0	0	0	0	0
K 661 KI-24 DO YOU USE OR REFER TO CO-CHANNEL INTERFERENCE	0	0	0	1	0	0	0
K 662 KI-25 DO YOU USE OR REFER TO IMAGE FREQUENCIES IN RECEIVERS	0	0	0	0	0	0	0
K 663 KI-26 DO YOU USE OR REFER TO SIGNAL TO IMAGE RATIOS OR IMAGE REJECTION RATIOS	0	0	0	0	0	0	0
K 664 KI-27 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM TRANSMITTER SCHEMATIC DIAGRAMS	1	1	1	1	0	0	0
K 665 KI-28 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM RECEIVER SCHEMATIC DIAGRAMS	1	1	1	1	0	0	0
K 666 KI-29 DO YOU WORK WITH FM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	2	2	4	3	0	5	0
K 667 KI-30 DO YOU INSPECT FM TRANSMIT OR RECEIVE SYSTEMS	2	2	4	3	0	5	0
K 668 KI-31 DO YOU CLEAN FM TRANSMIT OR RECEIVE SYSTEMS	2	2	4	3	0	5	0
K 669 KI-32 DO YOU ALIGN FM TRANSMIT OR RECEIVE SYSTEMS	3	2	4	3	0	8	0
K 670 KI-33 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE SYSTEMS	2	2	3	4	0	5	0
K 671 KI-34 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE COMPONENTS	2	2	1	3	0	5	0
K 672 KI-35 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE SYSTEMS	3	2	4	3	1	5	0
K 673 KI-36 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE COMPONENTS	2	2	1	3	1	5	0
K 674 KI-37 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	1	1	0	2	1	3	0
K 675 KI-38 DO YOU PERFORM TASKS ON FREQUENCY MULTIPLIERS	1	1	1	1	1	1	5

FM SYSTEMS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DT-TSK

DT-TSK	SPC 201	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207
K 676 K2-11 DO YOU PERFORM TASKS ON DRIVERS (INTERMEDIATE AMPLIFIERS)	2	2	1	2	1	5	0
K 677 K2-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS	1	2	0	2	1	5	0
K 678 K2-13 DO YOU PERFORM TASKS ON RF AMPLIFIERS	1	1	0	2	1	3	0
K 679 K2-14 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	1	1	1	1	1	5	0
K 680 K2-15 DO YOU PERFORM TASKS ON IF AMPLIFIERS	1	1	0	2	1	3	0
K 681 K2-16 DO YOU PERFORM TASKS ON LIMITERS	2	2	1	2	1	5	0
K 682 K2-17 DO YOU PERFORM TASKS ON FREQUENCY DISCRIMINATORS	2	2	1	3	1	5	0
K 683 K2-18 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSMITTERS	2	1	4	1	1	3	0
K 684 K2-19 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM RECEIVERS	2	1	4	2	1	3	0
K 685 K3-01 DO YOU CONVERT DECIMAL (BASE 10) NUMBERS TO OCTAL (BASE 8) NUMBERS	63	66	51	76	52	70	79
K 686 K3-02 DO YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2) NUMBERS	69	72	59	81	59	78	93
K 687 K3-03 DO YOU CONVERT OCTAL NUMBERS TO DECIMAL NUMBERS	64	67	54	77	52	78	79
K 688 K3-04 DO YOU CONVERT OCTAL NUMBERS TO BINARY NUMBERS	67	69	59	81	52	78	86
K 689 K3-05 DO YOU CONVERT BINARY NUMBERS TO DECIMAL NUMBERS	71	74	61	84	60	78	93
K 690 K3-06 DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS	66	68	57	81	50	78	93
K 691 K3-07 DO YOU ADD BINARY NUMBERS TO GET A SUM	57	59	50	74	43	62	84
K 692 K3-08 DO YOU SUBTRACT BINARY NUMBERS USING THE END-AROUND-CARRY METHOD	48	51	38	63	35	59	57
K 693 K3-09 DO YOU SUBTRACT BINARY NUMBERS USING THE DIRECT SUBTRACTION METHOD	51	53	43	68	38	59	71
K 694 K3-10 DO YOU ADD OCTAL NUMBERS TO GET A SUM	53	57	39	72	39	45	64
L 695 L1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO LOGIC FUNCTIONS	74	76	66	75	71	78	100
L 696 L1-02 DO YOU CONSTRUCT TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES	47	49	42	47	47	51	71
L 697 L1-03 DO YOU CONSTRUCT TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES	47	49	42	47	46	51	71
L 698 L1-04 DO YOU CONSTRUCT TRUTH TABLES FOR AND OR LOGIC SYMBOLS WITH STATE INDICATORS	47	48	42	46	46	51	71
L 699 L1-05 DO YOU CONSTRUCT TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS OR GATES	45	46	42	43	46	51	71
L 700 L1-06 DO YOU USE OR REFER TO TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES	57	58	50	54	58	68	64
L 701 L1-07 DO YOU USE OR REFER TO TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES	57	58	50	54	58	68	64
L 702 L1-08 DO YOU USE OR REFER TO TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS	56	58	49	53	57	70	64
L 703 L1-09 DO YOU USE OR REFER TO TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS	55	57	50	49	59	68	57
L 704 L1-10 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR AND GATES	74	77	65	78	72	78	86
L 705 L1-11 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR OR GATES	74	77	65	78	72	78	86
L 706 L1-12 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR NAND OR NOR GATES	72	74	62	73	71	76	86

NUMBERING SYSTEMS

LOGIC FUNCTIONS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

LY-TSK

UY-TSK																
L	707	L1-13 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR EXCLUSIVE OR GATES	69	72	61	70	71	70	79	SPC 201	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207
L	708	L2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO BOOLEAN EQUATIONS, LOGIC DIAGRAMS, OR LOGIC CIRCUITS	59	59	59	62	55	68	71							
L	709	L2-02 DO YOU DRAW LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUITS	21	21	19	18	21	35	7							
L	710	L2-03 DO YOU CONSTRUCT TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS	15	15	15	13	14	30	0							
L	711	L2-04 DO YOU DRAW LOGIC DIAGRAMS FROM GIVEN BOOLEAN EQUATIONS	31	31	28	30	29	41	29							
L	712	L2-05 DO YOU MEASURE INPUTS OR OUTPUTS OF LOGIC GATES	58	57	59	60	54	62	79							
L	713	L2-06 DO YOU DEVELOP OR ANALYZE BOOLEAN EQUATIONS IN THE PROCESS OF TROUBLESHOOTING DIGITAL CIRCUITS	37	38	30	37	36	43	43							
L	714	L2-07 DO YOU ANALYZE LOGIC CIRCUITS BY USING BOOLEAN ALGEBRA	36	37	32	36	35	38	43							
L	715	L2-08 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUIT GATES	27	26	30	22	27	36	21							
L	716	L2-09 DO YOU USE OR REFER TO TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS	17	16	20	11	17	32	7							
L	717	L2-10 DO YOU USE OR REFER TO LOGIC DIAGRAMS CONSISTING OF MORE THAN ONE GATE	57	57	58	58	54	59	79							
L	718	L2-11 DO YOU COMPUTE SUM AND CARRY EXPRESSIONS FOR SERIAL HALF OR FULL ADDER LOGIC DIAGRAMS	35	35	34	40	29	43	36							
L	719	L2-12 DO YOU TRACE DATA FLOW THROUGH PARALLEL FULL ADDER LOGIC DIAGRAMS	41	39	45	50	28	49	50							
L	720	L2-13 DO YOU WORK WITH ASTABLE (FREE RUNNING) MULTIVIBRATORS	47	46	53	49	43	62	50							
L	721	L2-14 DO YOU WORK WITH BISTABLE (FLIP-FLOP) MULTIVIBRATORS	58	57	64	59	54	68	74							
L	722	L2-15 DO YOU WORK WITH MONOSTABLE (ONE-SHOT) MULTIVIBRATORS	56	56	57	59	51	68	64							
L	723	L2-16 DO YOU USE OR REFER TO FLIP-FLOP MULTIVIBRATOR SYMBOLS	58	57	59	61	53	65	79							
L	724	L2-17 DO YOU USE OR REFER TO SINGLE-SHOT MULTIVIBRATOR SYMBOLS	58	58	57	62	54	68	71							
L	725	L2-18 DO YOU USE OR REFER TO FLIP-FLOP CIRCUIT DIAGRAMS	56	56	57	57	53	65	79							
L	726	L2-19 DO YOU USE OR REFER TO FLIP-FLOP TRUTH TABLES	43	43	43	39	51	43	43							
L	727	L2-20 DO YOU USE OR REFER TO COMPLEMENTED FLIP-FLOP LOGIC SYMBOLS	51	52	49	54	47	57	64							
L	728	L2-21 DO YOU USE OR REFER TO COMPLEMENTING FLIP-FLOP LOGIC SYMBOLS	50	50	49	52	46	51	64							
L	729	L2-22 DO YOU MEASURE OUTPUT WAVESHAPES OF LOGIC CIRCUITS	58	57	64	61	54	65	71							
L	730	L2-23 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTED FLIP-FLOP SCHEMATIC DIAGRAMS	51	51	50	53	50	49	71							
L	731	L2-24 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTING FLIP-FLOP SCHEMATIC DIAGRAMS	49	50	46	52	47	49	57							
L	732	L2-25 DO YOU CONSTRUCT TRUTH TABLES FOR J-K FLIP-FLOP LOGIC SYMBOLS	27	26	32	23	23	46	36							

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

QY-TSK

	SPC	201	202	203	204	205	206	207	
L 733 L3-01 DO YOU WORK WITH DIGITAL COUNTERS IN YOUR PRESENT JOB	73	76	64	76	70	81	86	86	COUNTERS
L 734 L3-02 DO YOU USE OR REFER TO UP-COUNTERS	74	76	68	77	71	76	86	86	
L 735 L3-03 DO YOU USE OR REFER TO DOWN-COUNTERS	71	73	66	74	68	73	86	86	
L 736 L3-04 DO YOU USE OR REFER TO SERIAL COUNTERS	70	72	65	74	66	70	86	86	
L 737 L3-05 DO YOU USE OR REFER TO PARALLEL COUNTERS	67	67	64	70	61	70	86	86	
L 738 L3-06 DO YOU USE OR REFER TO RING COUNTERS	55	55	55	54	46	68	71	71	
L 739 L3-07 DO YOU USE OR REFER TO DECADE COUNTERS	41	40	45	41	32	51	57	57	
L 740 L3-08 DO YOU USE OR REFER TO COUNT DETECT CIRCUITS	68	70	62	70	64	76	79	79	
L 741 L3-09 DO YOU USE OR REFER TO DOWN CLOCKS	70	73	59	73	68	70	86	86	
L 742 L3-10 DO YOU USE OR REFER TO UP CLOCKS	69	71	62	69	67	70	86	86	
L 743 L3-11 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	61	63	54	60	59	54	57	57	
L 744 L3-12 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-FLOPS	61	63	54	65	58	54	71	71	
L 745 L3-13 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF DECADE COUNTERS	39	37	47	39	30	43	57	57	
L 746 L3-14 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF RING COUNTERS	51	51	54	55	39	57	71	71	
L 747 L3-15 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER	64	66	59	68	61	62	71	71	
L 748 L3-16 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	70	72	65	73	65	70	86	86	
L 749 L3-17 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF COUNTERS	55	55	57	59	50	62	71	71	
L 750 L3-18 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	50	52	45	55	47	51	43	43	
L 751 L3-19 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-FLOPS	50	52	43	52	48	51	43	43	
L 752 L3-20 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER	52	53	46	54	50	51	50	50	TIMING CIRCUITS
L 753 L3-21 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR OTHER TYPES OF COUNTERS	45	46	45	50	39	51	50	50	
L 754 L3-22 DO YOU CONSTRUCT TRUTH TABLES FROM LOGIC DIAGRAMS OF DECADE COUNTERS	22	21	24	16	19	38	29	29	
L 755 L3-23 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP IN RING COUNTERS FOR SPECIFIC INPUT PULSES	41	41	39	45	30	51	43	43	
L 756 L3-24 DO YOU DETERMINE THE APPROPRIATE AND GATE NECESSARY IN COUNT DETECT CIRCUITS TO INDICATE A REQUIRED COUNT	56	57	54	59	52	57	64	64	
M 757 M1-01 DO YOU WORK WITH SAWTOOTH WAVE GENERATORS	40	37	51	38	34	65	21	21	
M 758 M1-02 DO YOU WORK WITH TRAPEZOIDAL WAVE GENERATORS	18	17	22	17	11	43	14	14	
M 759 M1-03 DO YOU WORK WITH PULSED OSCILLATORS WITH REGENERATIVE FEEDBACK	35	34	43	34	28	49	36	36	
M 760 M1-04 DO YOU WORK WITH PULSED OSCILLATORS WITHOUT REGENERATIVE FEEDBACK	33	30	43	35	25	43	36	36	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

	SPC 201	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207
M 794 M3-16 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OF THE FORCE OR TORQUE CREATED BY A MOTOR	4	5	3	2	8	3	7
M 795 M3-17 DO YOU DETERMINE OR MEASURE THE DIRECTION OF THE MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR	8	8	8	4	11	8	7
M 796 M3-18 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OR DIRECTION OF THE INDUCED VOLTAGE IN MOTORS	4	4	4	1	5	8	7
M 797 M3-19 DO YOU WORK WITH SYNCHRONOUS MOTORS	27	25	32	23	35	30	7
M 798 M3-20 DO YOU WORK WITH INDUCTION MOTORS	25	15	24	28	29	24	7
M 799 M3-21 DO YOU WORK WITH SPLIT-PHASE MOTORS	15	17	9	25	11	19	0
M 800 M3-22 DO YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS	28	28	31	28	26	38	36
M 801 M3-23 DO YOU INSPECT GENERATORS	16	17	12	36	4	11	0
M 802 M3-24 DO YOU CLEAN OR LUBRICATE GENERATORS	16	17	14	37	4	5	0
M 803 M3-25 DO YOU OPERATE GENERATORS	16	17	14	33	6	11	0
M 804 M3-26 DO YOU REMOVE OR REPLACE COMPLETE GENERATORS	12	14	5	30	4	5	0
M 805 M3-27 DO YOU REMOVE OR REPLACE GENERATOR PARTS	7	8	7	14	4	5	0
M 806 M3-28 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF GENERATORS	12	12	9	26	4	5	0
M 807 M3-29 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF GENERATORS	6	6	5	10	4	5	0
M 808 N1-01 DO YOU WORK WITH METERS IN YOUR PRESENT JOB	74	74	72	81	73	59	71
M 809 N1-02 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF PERMANENT MAGNETS	14	13	16	11	14	11	14
M 810 N1-03 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF MOVING COILS	16	15	19	12	18	14	7
M 811 N1-04 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF SPIRAL SPRINGS	16	16	15	14	18	11	14
M 812 N1-05 DO YOU READ METER SCALES	74	75	72	81	72	68	79
M 813 N1-06 DO YOU EXTEND THE RANGE OF AMMETERS	26	28	20	30	26	35	21
M 814 N1-07 DO YOU ZERO OHMMETERS	72	73	70	77	69	68	79
M 815 N1-08 DO YOU ZERO AMMETERS	39	38	43	41	38	41	36
M 816 N1-09 DO YOU EXTEND THE RANGE OF VOLTMETERS	37	37	35	41	33	43	36
M 817 N1-10 DO YOU USE OR REFER TO VOLTMETER SENSITIVITY (EXPRESSED IN UNITS OF OHMS PER VOLT)	37	38	31	39	39	43	14
M 818 N2-01 DO YOU WORK WITH SATURABLE REACTORS OR MAGNETIC AMPLIFIERS IN YOUR PRESENT JOB	9	9	5	9	11	8	0
M 819 N2-02 DO YOU INSPECT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	7	8	4	6	9	8	0
M 820 N2-03 DO YOU CLEAN MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	5	5	4	3	7	5	0
M 821 N2-04 DO YOU ADJUST MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	5	4	5	1	6	8	0
M 822 N2-05 DO YOU TROUBLESHOOT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	7	8	5	5	11	5	0
M 823 N2-06 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	6	9	4	7	11	8	0
M 824 N2-07 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIER OR SATURABLE REACTOR COMPONENTS	2	2	4	0	4	3	0

METER MOVEMENTS

SATURABLE REACTORS AND MAGNETIC
AMPLIFIERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UY-TSK

SPC	SPC	SPC	SPC	SPC	SPC	SPC
201	202	203	204	205	206	207

N 825 N2-08 DO YOU USE OR REFER TO HYSTERESIS CURVES OR LOOPS
N 826 N2-09 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT
WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF
SINGLE WINDING SATURABLE REACTORS

3	3	1	3	4	5	0
3	3	1	3	4	5	0

N 827 N2-10 DO YOU MEASURE OUTPUT WAVEFORMS ACROSS REACTOR
WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE
REACTORS

3	3	1	4	4	3	0
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N 828 N2-11 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT
WAVEFORMS FOR MAGNETIC AMPLIFIERS

3	3	3	3	4	3	0
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N 829 N2-12 DO YOU USE OR REFER TO COERCIVE FORCE IN SATURABLE
REACTORS

1	2	0	2	1	5	0
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N 830 N2-13 DO YOU USE OR REFER TO RESIDUAL MAGNETISM IN
SATURABLE REACTORS

3	3	1	5	2	5	0
---	---	---	---	---	---	---

N 831 N2-14 DO YOU USE OR REFER TO FLUX DENSITY IN SATURABLE
REACTORS

3	3	1	4	2	8	0
---	---	---	---	---	---	---

N 832 N2-15 DO YOU USE OR REFER TO POINT OF SATURATION IN
SATURABLE REACTORS

5	5	3	5	6	8	0
---	---	---	---	---	---	---

N 833 N2-16 DO YOU USE OR REFER TO SATURABLE REACTOR SCHEMATIC
SYMBOLS

6	7	1	5	10	5	0
---	---	---	---	----	---	---

N 834 N3-01 DO YOU WORK WITH WAVESHAPING CIRCUITS IN YOUR PRESENT
JOB

59	57	65	58	56	59	64
----	----	----	----	----	----	----

N 835 N3-02 DO YOU USE OR REFER TO TRANSIENT INTERVALS

26	24	32	22	25	38	14
----	----	----	----	----	----	----

N 836 N3-03 DO YOU USE OR REFER TO PULSE WIDTH (PW)

59	57	69	56	58	59	64
----	----	----	----	----	----	----

N 837 N3-04 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)
N 838 N3-05 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY
(PRF)

57	55	64	52	57	57	57
52	51	58	48	51	54	57

N 839 N3-06 DO YOU USE OR REFER TO DIFFERENTIATING CIRCUITS
N 840 N3-07 DO YOU USE OR REFER TO INTEGRATING CIRCUITS

43	42	45	34	48	43	29
39	38	45	36	39	43	43

N 841 N3-08 DO YOU USE OR REFER TO THE CLASSIFICATION OF TIME
CONSTANTS (TC) AS LONG, MEDIUM, OR SHORT

30	29	32	26	33	30	21
----	----	----	----	----	----	----

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

15	15	15	10	21	16	14
----	----	----	----	----	----	----

N 843 N3-10 DO YOU WORK WITH SQUARE WAVE GENERATORS

44	41	54	34	46	54	36
----	----	----	----	----	----	----

N 844 N3-11 DO YOU WORK WITH RECTANGULAR WAVE GENERATORS

25	22	38	17	25	35	29
----	----	----	----	----	----	----

N 845 U1-01 DO YOU WORK ON SINGLE SIDEBAND SYSTEMS IN YOUR
PRESENT JOB

1	1	0	1	1	0	0
---	---	---	---	---	---	---

U 846 U1-02 DO YOU INSPECT SSB TRANSMIT OR RECEIVE SYSTEMS

0	0	0	0	0	0	0
---	---	---	---	---	---	---

U 847 U1-03 DO YOU CLEAN SSB TRANSMIT OR RECEIVE SYSTEMS

0	0	0	0	0	0	0
---	---	---	---	---	---	---

U 848 U1-04 DO YOU ALIGN SSB TRANSMIT OR RECEIVE SYSTEMS

0	0	0	0	0	0	0
---	---	---	---	---	---	---

U 849 U1-05 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE
SYSTEMS

0	0	0	0	0	0	0
---	---	---	---	---	---	---

U 850 U1-06 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE
COMPONENTS

0	0	0	0	0	0	0
---	---	---	---	---	---	---

U 851 U1-07 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE
SYSTEMS

0	0	0	0	0	0	0
---	---	---	---	---	---	---

U 852 U1-08 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE
COMPONENTS

0	0	0	0	0	0	0
---	---	---	---	---	---	---

WAVESHAPING CIRCUITS

SINGLE SIDEBAND SYSTEMS

PCT MEMS RESPONDING *YES* AT SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

BY-TSK

SPC SPC SPC SPC SPC SPC SPC SPC
201 202 203 204 205 206 207

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

PULSE MODULATION SYSTEMS

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UT-TSK		SPC 201	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207
0 889	02-15 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER SUPPLIES	2	2	3	0	2	6	0
0 890	02-16 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM CHARGING CHOKES AND CHARGING DIODES	0	0	1	0	0	0	0
0 891	02-17 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE FORMING NETWORKS	3	3	4	1	2	11	0
0 892	02-18 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TIMERS	2	2	3	0	3	8	0
0 893	02-19 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM SWITCHES SUCH AS GAS THYRATRONS	0	0	0	0	1	0	0
0 894	02-20 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE TRANSFORMERS	2	2	1	1	2	5	0
0 895	02-21 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TRANSMITTER TUBES	0	0	0	0	1	0	0
0 896	02-22 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM RF AMPLIFIERS	1	1	0	0	2	3	0
0 897	02-23 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM FREQUENCY CONVERTERS	2	2	3	1	2	8	0
0 898	02-24 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM IF AMPLIFIERS	0	0	0	0	1	0	0
0 899	02-25 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DETECTORS	2	1	4	1	2	3	0
0 900	02-26 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM VIDEO AMPLIFIERS	1	1	3	0	1	5	0
0 901	02-27 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER VIDEO AMPLIFIERS	1	1	1	1	1	3	0
0 902	02-28 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DON'T REMEMBER WHICH PULSE MODULATION SYSTEM STAGES RECURRENCE FREQUENCY (PRF)	1	1	0	0	2	5	0
0 903	02-29 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)	3	3	4	0	4	11	0
0 904	02-30 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)	3	3	4	0	4	11	0
0 905	02-31 DO YOU USE OR REFER TO PULSE WIDTH (PW)	3	3	4	0	4	11	0
0 906	02-32 DO YOU USE OR REFER TO PULSE SHAPE	3	3	4	0	4	11	0
0 907	02-33 DO YOU USE OR REFER TO PEAK POWER	2	2	1	0	4	5	0
0 908	02-34 DO YOU USE OR REFER TO AVERAGE POWER	2	3	1	1	4	5	0
0 909	02-35 DO YOU CALCULATE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)	3	3	1	1	3	11	0
0 910	02-36 DO YOU MEASURE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)	3	3	4	1	3	11	0
0 911	02-37 DO YOU USE FORMULAS TO CALCULATE AVERAGE POWER OR PEAK POWER OF PULSE MODULATION TRANSMIT SYSTEMS	1	1	0	0	3	3	0
0 912	02-38 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION TRANSMITTER SCHEMATIC DIAGRAMS	3	3	3	1	3	8	0
0 913	02-39 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION RECEIVER SCHEMATIC DIAGRAMS	3	2	5	1	2	8	0
0 914	03-01 DO YOU WORK WITH ANTENNAS IN YOUR PRESENT JOB	1	1	0	2	0	0	0
0 915	03-02 DO YOU INSPECT ANTENNAS	0	0	0	0	0	0	0

ANTENNAS

PCT HRS RESPONDING 'YES' BY SELECTED GMPs

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UY-TSK

	SPC 201	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207
0 916 03-03 DO YOU CLEAN ANTENNAS	0	0	0	0	0	0	0
0 917 03-04 DO YOU PHYSICALLY ALIGN ANTENNAS	0	0	0	0	0	0	0
0 918 03-05 DO YOU ELECTRICALLY ALIGN ANTENNAS	0	0	0	0	0	0	0
0 919 03-06 DO YOU TROUBLESHOOT TO ANTENNAS	0	0	0	1	0	0	0
0 920 03-07 DO YOU TROUBLESHOOT TO ANTENNA COMPONENTS	0	0	0	0	0	0	0
0 921 03-08 DO YOU REMOVE OR INSTALL ANTENNAS	0	0	0	0	0	0	0
0 922 03-09 DO YOU REMOVE OR REPLACE COMPONENTS OF ANTENNAS	0	0	0	0	0	0	0
0 923 03-10 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF E OR ELECTRIC FIELD LINES	0	0	0	1	0	0	0
0 924 03-11 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF H OR MAGNETIC FIELD LINES	0	0	0	1	0	0	0
0 925 03-12 DO YOU DETERMINE THE DIRECTION OF THE MAGNETIC LINES IN RELATION TO THE ELECTRIC LINES OF FORCE FOR ANTENNAS	0	0	0	0	0	0	0
0 926 03-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE OF CORRECT LENGTH (HALF-WAVE) ACT AS INDUCTIVE LOADS TO THE GENERATOR	0	0	0	0	0	0	0
0 927 03-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE LONGER THAN A HALF-WAVE ACT AS INDUCTIVE LOADS TO THE GENERATOR	0	0	0	0	0	0	0
0 928 03-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE SHORTER THAN A HALF-WAVE ACT AS CAPACITIVE LOADS TO THE GENERATOR	0	0	0	0	1	0	0
0 929 03-16 DO YOU WORK WITH HERTZ ANTENNAS	0	0	0	0	1	0	0
0 930 03-17 DO YOU WORK WITH MARCONI ANTENNAS	1	1	0	1	1	0	0
0 931 03-18 DO YOU WORK WITH BROADSIDE ARRAYS	0	0	0	0	1	0	0
0 932 03-19 DO YOU WORK WITH END-FIRE ARRAYS	0	0	0	0	1	0	0
0 933 03-20 DO YOU WORK WITH CARDIOID ARRAYS	0	0	0	0	1	0	0
0 934 03-21 DO YOU WORK WITH COLLINER ARRAYS	1	1	0	1	1	0	0
0 935 03-22 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC INDUCTION FIELDS WHEN WORKING WITH ANTENNAS	1	1	0	1	1	0	0
0 936 03-23 DO YOU MEASURE ELECTROMAGNETIC INDUCTION FIELDS OF ANTENNAS	1	0	1	0	1	0	0
0 937 03-24 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC RADIATION FIELDS WHEN WORKING WITH ANTENNAS	1	1	0	1	1	0	0
0 938 03-25 DO YOU MEASURE ELECTROMAGNETIC RADIATION FIELDS OF ANTENNAS	1	1	0	0	2	0	0
0 939 03-26 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA RADIATION	0	0	0	0	1	0	0
0 940 03-27 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA INDUCTION FIELD	0	0	0	0	1	0	0
0 941 03-28 ARE ANY OF THE ANTENNAS YOU WORK ON LINEARLY POLARIZED	1	1	0	1	1	0	0
0 942 03-29 ARE ANY OF THE ANTENNAS YOU WORK ON CIRCULARLY POLARIZED	0	0	0	0	1	0	0
0 943 03-30 DO YOU MEASURE OR DETERMINE THE POLARITY OF ANTENNAS YOU WORK ON	0	0	0	0	1	0	0
0 944 03-31 DO YOU CONSTRUCT, OR MAKE THE CALCULATIONS NECESSARY TO CONSTRUCT, ANTENNAS OF CORRECT LENGTH FOR SPECIFIC WAVELENGTHS	0	0	0	0	1	0	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UY-TSK

	SPC 201	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207
0 945 03-32 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS	0	0	0	0	0	0	0
0 946 03-33 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS DIRECTORS	0	0	0	0	0	0	0
0 947 03-34 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS REFLECTORS	0	0	0	0	0	0	0
0 948 03-35 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN DON'T REMEMBER WHAT KIND OF ELEMENTS	0	0	0	1	0	0	0
0 949 03-36 DO YOU WORK ON UNIDIRECTIONAL ANTENNAS	0	0	0	1	0	0	0
0 950 03-37 DO YOU WORK ON BIDIRECTIONAL ANTENNAS	0	0	0	0	0	0	0
0 951 03-38 DO YOU WORK ON DON'T REMEMBER THE DIRECTIONALITY	0	0	0	0	0	0	0
0 952 03-39 DO YOU WORK WITH ROTARY ANTENNA ARRAYS	0	0	0	0	0	0	0
0 953 03-40 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)	5	4	7	9	2	0	0
0 954 03-41 DO YOU REFER TO OR USE COPPER LOSS OR I2R LOSS IN TRANSMISSION LINES	0	0	1	0	0	0	0
0 955 03-42 DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY CURRENTS IN TRANSMISSION LINES	1	0	1	1	0	0	0
0 956 03-43 DO YOU REFER TO OR USE RADIATION LOSS IN TRANSMISSION LINES	0	0	1	0	0	0	0
0 957 03-44 DO YOU USE OR REFER TO DIELECTRIC LOSS IN TRANSMISSION LINES	1	0	1	0	1	0	0
0 958 03-45 DO YOU USE OR REFER TO LEAKAGE LOSSES IN TRANSMISSION LINES	1	0	1	0	1	0	0
0 959 03-46 DO YOU WORK WITH TWISTED PAIR TRANSMISSION LINES	2	1	4	3	1	0	0
0 960 03-47 DO YOU WORK WITH TWIN LEAD TRANSMISSION LINES	1	1	4	1	1	0	0
0 961 03-48 DO YOU WORK WITH OPEN TWO-WIRE TRANSMISSION LINES	1	0	3	0	1	0	0
0 962 03-49 DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION LINES	4	3	7	7	1	0	0
0 963 03-50 DO YOU WORK WITH RIGID COAXIAL CABLE TRANSMISSION LINES	2	1	3	3	1	0	0
0 964 03-51 DO YOU TROUBLESHOOT TRANSMISSION LINES	2	2	4	4	1	0	0
0 965 03-52 DO YOU ANALYZE VOLTAGE OR CURRENT WAVEFORMS IN TRANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION (OPEN, SHORTED, CAPACITIVE, INDUCTIVE)	1	1	1	1	2	0	0
0 966 03-53 DO YOU SELECT APPROPRIATE TRANSMISSION LINES TERMINATIONS TO ACHIEVE DESIRED WAVEFORMS	2	1	3	3	1	0	0
0 967 03-54 DO YOU USE OR REFER TO SCHEMATIC SYMBOLS FOR LINE TERMINATIONS IN TERMS OF CIRCUIT TERMINATIONS	3	2	5	5	1	0	0
0 968 03-55 DO YOU MEASURE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES	1	1	0	1	1	0	0
0 969 03-56 DO YOU CALCULATE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES	1	1	0	1	1	0	0
0 970 03-57 DO YOU PERFORM THE CALCULATIONS NECESSARY TO DETERMINE THE IMPEDANCE AND LENGTH OF QUARTER - WAVELENGTH MATCHING TRANSFORMERS TO MATCH TRANSMISSION LINES TO LOADS	0	0	0	0	1	0	0

TRANSMISSION LINES

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

	SPC 201	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207
P 971 P1-19 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING MATCHING TRANSFORMERS	3	3	3	4	3	0	0
P 972 P1-20 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING DELTA MATCHING	1	0	1	0	1	0	0
P 973 P1-21 DO YOU SELECT THE TYPE OF TRANSMISSION LINE NEEDED FOR PARTICULAR JOBS WITHOUT REFERRING TO TECHNICAL DATA	1	1	0	1	1	0	0
P 974 P1-22 DO YOU USE OR REFER TO THE TERM CHARACTERISTIC IMPEDANCE (Z0) OF TRANSMISSION LINES	2	1	4	0	3	0	0
P 975 P1-23 DO YOU CALCULATE THE CHARACTERISTIC IMPEDANCE (Z0) OF TRANSMISSION LINES	0	0	1	0	0	0	0
P 976 P1-24 DO YOU USE OR REFER TO THE TERM CUTOFF FREQUENCY OF TRANSMISSION LINES	1	0	1	1	0	0	0
P 977 P1-25 DO YOU USE OR REFER TO THE TERM VELOCITY FACTOR (K) OF TRANSMISSION LINES	0	0	0	1	0	0	0
P 978 P1-26 DO YOU COMPUTE THE ELECTRICAL LENGTH OF TRANSMISSION LINES FOR PARTICULAR FREQUENCIES	0	0	0	1	0	0	0
P 979 P1-27 DO YOU CONSTRUCT TRANSMISSION LINES OF PARTICULAR ELECTRICAL LENGTH FOR GIVEN FREQUENCIES	0	0	0	0	0	0	0
P 980 P1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT AS THE FREQUENCY INCREASES AND THE PHYSICAL LENGTH OF TRANSMISSION LINES REMAIN CONSTANT, THE ELECTRICAL LENGTH INCREASES	0	0	0	1	0	0	0
P 981 P1-29 DO YOU WORK WITH NONRESONANT (FLAT) TRANSMISSION LINES	1	1	3	1	1	0	0
P 982 P1-30 DO YOU WORK WITH RESONANT TRANSMISSION LINES	0	0	0	1	0	0	0
P 983 P1-31 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING STUB MATCHING	0	0	1	0	0	0	0
P 984 P2-01 DO YOU WORK WITH WAVEGUIDES OR CAVITY RESONATORS IN YOUR PRESENT JOB	0	0	0	1	0	0	0
P 985 P2-02 DO YOU INSPECT WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0	0	0	0
P 986 P2-03 DO YOU CLEAN WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0	0	0	0
P 987 P2-04 DO YOU BEND WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0	0	0	0
P 988 P2-05 DO YOU TWIST WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0	0	0	0
P 989 P2-06 DO YOU PRESSURIZE WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0	0	0	0
P 990 P2-07 DO YOU PURGE WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0	0	0	0
P 991 P2-08 DO YOU TROUBLESHOOT WAVEGUIDES OR CAVITY RESONATORS	0	0	0	0	0	0	0
P 992 P2-09 DO YOU REMOVE OR INSTALL COMPLETE WAVEGUIDES	0	0	0	0	0	0	0
P 993 P2-10 DO YOU REMOVE OR INSTALL WAVEGUIDE SECTIONS	0	0	0	0	0	0	0
P 994 P2-11 DO YOU REMOVE OR INSTALL DUMMY LOADS	0	0	0	0	0	0	0
P 995 P2-12 DO YOU REMOVE OR INSTALL L BENDS	0	0	0	0	0	0	0
P 996 P2-13 DO YOU REMOVE OR INSTALL H BENDS	0	0	0	0	0	0	0
P 997 P2-14 DO YOU REMOVE OR INSTALL OTHER BENDS	0	0	0	0	0	0	0
P 998 P2-15 DO YOU REMOVE OR INSTALL CHOKE JOINTS	0	0	0	0	0	0	0
P 999 P2-16 DO YOU REMOVE OR INSTALL ROTATING JOINTS	0	0	0	0	0	0	0
P1000 P2-17 DO YOU REMOVE OR INSTALL DIRECTIONAL COUPLERS	0	0	0	0	0	0	0
P1001 P2-18 DO YOU REMOVE OR INSTALL BIDIRECTIONAL COUPLERS	0	0	0	0	0	0	0
P1002 P2-19 DO YOU USE OR REFER TO "A" WALL OF WAVEGUIDES	0	0	0	0	0	0	0

WAVEGUIDES AND CAVITY RESONATORS

PCT MEMS RESPONDING *YES* BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

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0Y-TSK

P1025 P2-42 DO YOU DETERMINE THE POSITIONING OR SIZE OF APERTURES
IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO
TECHNICAL DATA

P1026 P2-43 ARE CHOKE JOINTS USED IN WAVEGUIDES OR CAVITY
RESONATORS YOU WORK WITH

P1027 P2-44 ARE ROTATING JOINTS USED IN WAVEGUIDES OR CAVITY
RESONATORS YOU WORK WITH

P1028 P2-45 ARE DONUT REMEMBER THE KIND OF JOINTS USED IN
WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH

P1029 P2-46 DO YOU TUNE CAVITY RESONATORS USING CAPACITIVE TUNING

P1030 P2-47 DO YOU TUNE CAVITY RESONATORS USING INDUCTIVE TUNING

P1031 P2-48 DO YOU TUNE CAVITY RESONATORS USING VOLUME TUNING

P1032 P2-49 DO YOU TUNE CAVITY RESONATORS USING DONUT REMEMBER
THE METHOD OF TUNING

P1033 P2-50 DO YOU MEASURE THE FREQUENCY OF SIGNALS IN CAVITY
RESONATORS

P1034 P3-01 IN YOUR PRESENT JOB DO YOU WORK WITH KLYSTRONS,
TRAVELING WAVE TUBES (TWT), PARAMETRIC AMPLIFIERS, OR
MAGNETRONS

P1035 P3-02 DO YOU USE OR REFER TO INTERELECTRODE CAPACITANCE

P1036 P3-03 DO YOU USE OR REFER TO ELECTRON TRANSIT TIME

P1037 P3-04 DO YOU USE OR REFER TO LEAD INDUCTANCE

P1038 P3-05 DO YOU USE OR REFER TO RF LOSSES IN EXTERNAL
CIRCUITRY

P1039 P3-06 DO YOU USE OR REFER TO PRINCIPLE OF ELECTRON VELOCITY
MODULATION

P1040 P3-07 DO YOU USE OR REFER TO ELECTRON BUNCHING

P1041 P3-08 DO YOU WORK WITH TWO-CAVITY KLYSTRONS

P1042 P3-09 DO YOU WORK WITH THREE-CAVITY KLYSTRONS

P1043 P3-10 DO YOU WORK WITH REFLEX KLYSTRONS

P1044 P3-11 DO YOU WORK WITH TRAVELING-WAVE TUBES (TWT)

P1045 P3-12 DO YOU WORK WITH NONDEGENERATIVE PARAMETRIC
AMPLIFIERS

P1046 P3-13 DO YOU WORK WITH UP-CONVERTER PARAMETRIC AMPLIFIERS

P1047 P3-14 DO YOU WORK WITH MAGNETRONS

P1048 P3-15 DO YOU INSPECT KLYSTRONS OR TWT

P1049 P3-16 DO YOU CLEAN KLYSTRONS OR TWT

P1050 P3-17 DO YOU TUNE KLYSTRONS OR TWT ELECTRICALLY

P1051 P3-18 DO YOU TUNE KLYSTRONS OR TWT MECHANICALLY

P1052 P3-19 DO YOU PERFORM OPERATIONAL CHECKS OF KLYSTRONS OR
TWT

P1053 P3-20 DO YOU TROUBLESHOOT KLYSTRONS OR TWT

P1054 P3-21 DO YOU REMOVE OR REPLACE COMPLETE KLYSTRON OR TWT

P1055 P3-22 DO YOU REMOVE OR REPLACE KLYSTRON OR TWT COMPONENTS

P1056 P3-23 DO YOU INSPECT PARAMETRIC AMPLIFIERS

P1057 P3-24 DO YOU CLEAN PARAMETRIC AMPLIFIERS

P1058 P3-25 DO YOU ADJUST PARAMETRIC AMPLIFIERS

SPC SPC SPC SPC SPC SPC SPC SPC SPC SPC
201 202 203 204 205 206 207

MICROWAVE AMPLIFIERS AND
OSCILLATORS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DT-TSK

	SPC 201	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207
P1059 P3-26 DO YOU TUNE PARAMETRIC AMPLIFIERS	0	0	0	0	1	0	0
P1060 P3-27 DO YOU PERFORM OPERATIONAL CHECKS OF PARAMETRIC AMPLIFIERS	0	0	0	0	1	0	0
P1061 P3-28 DO YOU TROUBLESHOOT PARAMETRIC AMPLIFIERS	0	0	0	0	1	0	0
P1062 P3-29 DO YOU REMOVE OR REPLACE COMPLETE PARAMETRIC AMPLIFIER	0	0	0	0	1	0	0
P1063 P3-30 DO YOU REMOVE OR REPLACE PARAMETRIC AMPLIFIER COMPONENTS	0	0	0	0	1	0	0
P1064 P3-31 DO YOU INSPECT MAGNETRONS	0	0	0	0	1	0	0
P1065 P3-32 DO YOU CLEAN MAGNETRONS	0	0	0	0	1	0	0
P1066 P3-33 DO YOU ADJUST MAGNETRONS	0	0	0	0	1	0	0
P1067 P3-34 DO YOU TUNE MAGNETRONS	0	0	0	0	1	0	0
P1068 P3-35 DO YOU PERFORM OPERATIONAL CHECKS OF MAGNETRONS	0	0	0	0	1	0	0
P1069 P3-36 DO YOU TROUBLESHOOT MAGNETRONS	0	0	0	0	1	0	0
P1070 P3-37 DO YOU REMOVE OR REPLACE COMPLETE MAGNETRON	0	0	0	0	1	0	0
P1071 P3-38 DO YOU REMOVE OR REPLACE MAGNETRON COMPONENTS	0	0	0	0	1	0	0
P1072 P3-39 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS COLLECTOR PLATES	0	0	0	0	1	0	0
P1073 P3-40 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER CAVITIES	0	0	0	0	1	0	0
P1074 P3-41 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER GRIDS	0	0	0	0	1	0	0
P1075 P3-42 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS FEEDBACK LOOPS	0	0	0	0	0	0	0
P1076 P3-43 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS DRIFT SPACES	0	0	0	0	0	0	0
P1077 P3-44 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER GRIDS	0	0	0	0	0	0	0
P1078 P3-45 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER CAVITIES	0	0	0	0	0	0	0
P1079 P3-46 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CONTROL GRIDS	0	0	0	0	0	0	0
P1080 P3-47 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATHODES	0	0	0	0	0	0	0
P1081 P3-48 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON REFLECTOR (REFLECTOR) PLATES	0	0	0	0	0	0	0
P1082 P3-49 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRIDS	0	0	0	1	0	0	0
P1083 P3-50 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRID CAVITY GAPS	0	0	0	0	0	0	0
P1084 P3-51 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON RESONANT CAVITIES	0	0	0	0	0	0	0
P1085 P3-52 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON MAGNETIC COUPLING LOOPS	0	0	0	0	0	0	0
P1086 P3-53 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON FILAMENTS	0	0	0	0	0	0	0
P1087 P3-54 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON CATHODES	0	0	0	0	0	0	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UY-TSK

	SPC 201	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207
P1088 P3-55 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON OUTPUT LEADS	U	U	U	U	U	U	U
P1089 P3-56 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES FILAMENTS	U	U	U	U	U	U	U
P1090 P3-57 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES CATHODES	U	U	U	U	U	U	U
P1091 P3-58 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MODULATOR GRIDS	U	U	U	U	U	U	U
P1092 P3-59 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ANODES	U	U	U	U	U	U	U
P1093 P3-60 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES HELIXES	U	U	U	U	U	U	U
P1094 P3-61 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES COLLECTORS	U	U	U	U	U	U	U
P1095 P3-62 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MAGNETS	U	U	U	U	U	U	U
P1096 P3-63 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ATTENUATORS	U	U	U	U	U	U	U
P1097 P3-64 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE CIRCULATORS	U	U	U	U	U	U	U
P1098 P3-65 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER SIGNAL CAVITIES	U	U	U	U	U	U	U
P1099 P3-66 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER IDLEM CAVITIES	U	U	U	U	U	U	U
P1100 P3-67 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER VARACTOR DIODES	U	U	U	U	U	U	U
P1101 P3-68 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE ISOLATORS	U	U	U	U	U	U	U
P1102 P3-69 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER REVERSE-BIAS BATTERIES	U	U	U	U	U	U	U
P1103 P3-70 DO YOU PERFORM TASKS ON ANODES	U	U	U	U	U	U	U
P1104 P3-71 DO YOU PERFORM TASKS ON ANODE COOLING PINS	U	U	U	U	U	U	U
P1105 P3-72 DO YOU PERFORM TASKS ON COUPLING LOOPS	U	U	U	U	U	U	U
P1106 P3-73 DO YOU PERFORM TASKS ON HEATER LEADS	U	U	U	U	U	U	U
P1107 P3-74 DO YOU PERFORM TASKS ON RESONANT CAVITIES	U	U	U	U	U	U	U
P1108 P3-75 DO YOU PERFORM TASKS ON CATHODES	U	U	U	U	U	U	U
P1109 P3-76 DO YOU PERFORM TASKS ON MAGNETS	U	U	U	U	U	U	U
Q1110 Q1-01 DO YOU USE OR REFER TO STORAGE REGISTERS	81	81	80	88	74	73	93
Q1111 Q1-02 DO YOU USE OR REFER TO SHIFT REGISTERS	79	80	78	86	73	73	93
Q1112 Q1-03 DO YOU USE OR REFER TO LOGIC SYMBOLS OF SHIFT REGISTERS	75	75	76	75	73	73	93
Q1113 Q1-04 DO YOU USE OR REFER TO LOGIC SYMBOLS OF STORAGE REGISTERS	75	75	76	76	73	70	93
Q1114 Q1-05 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	76	75	77	85	68	62	86
Q1115 Q1-06 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF REGISTERS	75	75	74	86	64	62	86

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Dy-TSK

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AIR FORCE OCCUPATIONAL MEASUREMENT CENTER LACKLAND A--ETC F/G 5/9
ELECTRONIC COMPUTER SYSTEMS SPECIALIST AFSC 30554.(U)
SEP 77 T J O'CONNOR, W F KASPER

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Electronic Technicians												
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This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned as Electronic Computer Systems Specialist (AFSC 30554). The report gives a detailed listing of the technical tasks and knowledge needed to perform the jobs within the specialty or career ladder. <i>over</i> CONTINUED												

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→ This specialty has the following functions:

Installs, maintains, and repairs electronic computer systems, including transmission, processing, and display equipment. Performs preventive maintenance on electronic computer systems equipment. Maintains inspection and maintenance records. Supervises electronic computer systems repair personnel. ↗

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