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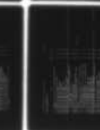
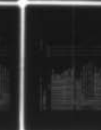
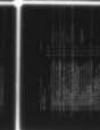
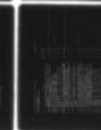
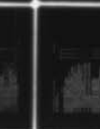
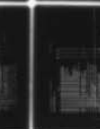
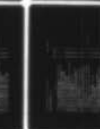
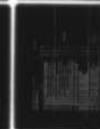
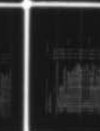
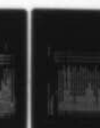
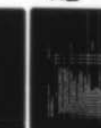
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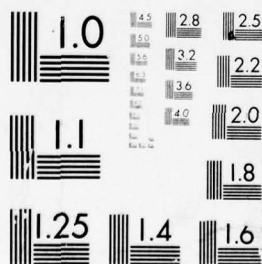
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1 OCCUPATIONAL SURVEY REPORT
ELECTRONIC PRINCIPLES

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PREFACE

This report presents a summary of the results of a detailed Air Force Electronic Principles Survey of the Instrument Trainer Specialist, AFSC 34151.

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 1Lt Michael J. Kelley. All are members of the Occupational Survey Branch, USAF Occupational Measurement Center, Lackland AFB, Texas.

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

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

This report has been reviewed and is approved.

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

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

ELECTRONIC PRINCIPLES OCCUPATIONAL SURVEY REPORT
INSTRUMENT TRAINER SPECIALIST
AFSC 34151

INTRODUCTION

— This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned as Instrument Trainer Specialists (AFSC 34151). 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 34151 airmen worldwide. Responses from 123 individuals represented 71 percent of the total of all AFSC 34151 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

<u>COMMAND</u>	34151	
	<u>PERCENT ASSIGNED</u>	<u>PERCENT OF SAMPLE</u>
ATC	79	78
MAC	6	7
TAC	6	7
USAF A	3	2
USAF E	2	2
ADC	2	2
AFSC	1	1
OTHER	1	1
TOTAL	100	100

Total Assigned - 173
Total Sampled - 123
Percent Sampled - 71%

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 three 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 Oscilloscopes (p. 13) to low in areas such as AM and FM Systems (pp.23-25). Additional AFSC 34151 data can be obtained upon request to the Chief, Occupational Survey Branch (OMY).

APPENDIX

PCT MARS RESPONDING "YES" BY SELECTED GRPS

GPSUM1 PAGE 1

TABULATION OF ELECTRONIC PRINCIPLES UTILIZATION DATA FOR SELECTED GROUPS
IN THE 341X1 CAREEN FIELD.

REPORTS ON THE FOLLOWING GROUPS WERE REQUESTED

GROUP IDENTITY =	SPC001	ALL AIRMEN DAFSC 34151	CONTAINING	123 MEMBERS.
GROUP IDENTITY =	SPC002	ALL AIRMEN DAFSC 34151	CONTAINING	117 MEMBERS.
GROUP IDENTITY =	SPC003	ALL AIRMEN DAFSC 34151 STATIONED OVERSEAS	CONTAINING	2 MEMBERS.

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMINGSPC SPC SPC
001 002 003

DY-TSX

A 1 A1-01 DO YOU USE INSTRUMENTS, SUCH AS METERS OR OSCILLOSCOPES, IN WHICH IT IS NECESSARY TO AMPLIFY OR ATTENUATE VOLTAGE, RESISTANCE, ETC., BY POWERS OF 10.

A 2 A1-02 DO YOU USE PUBLICATIONS, SUCH AS A TECHNICAL ORDERS OR MAINTENANCE MANUALS, IN WHICH IT IS NECESSARY FOR YOU TO MULTIPLY OR DIVIDE BY A POWER OF 10 BEFORE YOU CAN APPLY THE INFORMATION FROM THE PUBLICATION IN A USEFUL WAY ON THE JOB.

A 3 A1-03 DO YOU REARRANGE AND SOLVE FORMULAS OR EQUATIONS.

A 4 A1-04 DO YOU CALCULATE THE SQUARE ROOT OF A QUANTITY.

A 5 A1-05 DO YOU SOLVE FOR UNKNOWN QUANTITIES.

A 6 A1-06 DO YOU CONVERT NUMBERS TO LOGARITHMS.

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

A 8 A1-08 DO YOU SOLVE QUADRATIC EQUATIONS.

A 9 A1-09 DO YOU USE THE NATURAL SYSTEM OF LOGARITHMS.

A 10 A1-10 DO YOU PERFORM CALCULATIONS ON VECTOR QUANTITIES.

A 11 A1-11 DO YOU WORK WITH TRIGONOMETRIC FUNCTIONS SUCH AS SINE, COSINE, OR TANGENT.

A 12 A1-12 DO YOU DETERMINE AREAS OF PLANE FIGURES.

A 13 A1-13 DO YOU SOLVE OR USE SIMULTANEOUS EQUATIONS.

A 14 A1-14 DO YOU SOLVE OR USE PROPORTIONS.

A 15 A2-01 DO YOU USE THE TERM VOLTAGE OR VOLT (V).

A 16 A2-02 DO YOU USE THE TERM ELECTROMOTIVE FORCE (EMF).

A 17 A2-03 DO YOU USE THE TERM OHM.

A 18 A2-04 DO YOU USE THE TERM ION.

A 19 A2-05 DO YOU USE THE TERM DYNE.

A 20 A2-06 DO YOU USE THE TERM AMPERE.

A 21 A2-07 DO YOU USE THE TERM NEUTRON.

A 22 A2-08 DO YOU USE THE TERM COULOMB.

A 23 A2-09 DO YOU USE THE TERM PROTON.

A 24 A3-01 DO YOU WORK WITH RESISTORS IN YOUR PRESENT JOB.

A 25 A3-02 DO YOU INSPECT RESISTORS.

A 26 A3-03 DO YOU CLEAN RESISTORS.

A 27 A3-04 DO YOU ADJUST RESISTORS.

A 28 A3-05 DO YOU CHECK OHMIC VALUE OR RESISTORS.

A 29 A3-06 DO YOU REMOVE OR REPLACE RESISTORS.

A 30 A3-07 DO YOU USE OR REFER TO TEMPERATURE COEFFICIENTS FOR RESISTORS ON ANY TASKS YOU PERFORM.

A 31 A3-08 DO YOU USE OR REFER TO RESISTOR SYMBOLS SUCH AS FIRED RESISTOR SYMBOLS OR TAPPED RESISTOR SYMBOLS.

A 32 A3-09 DO YOU IDENTIFY OR CLASSIFY THE RESISTORS YOU WORK WITH AS CARBON, FIXED WIRE, SLIDE TAP, RHEOSTAT, OR POTENTIOMETER.

A 33 A3-10 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE OHMIC VALUE OF RESISTANCE.

MATHEMATICS

DIRECT CURRENT
AND VOLTAGE

RESISTANCE

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

GPSUM1 PAGE 3

TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

0Y-TSK

SPC SPC SPC
001 002 003

A 34	A3-11 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE TOLERANCE.	49	47	50
A 35	A3-12 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE FAILURE RATE.	14	14	50
A 36	A3-13 DO YOU MAKE DECISIONS IN WHICH YOU MUST DETERMINE HOW TWO OR MORE BATTERIES MUST BE CONNECTED TOGETHER TO ACHIEVE A SPECIFIC VOLTAGE.	14	13	0
A 37	A3-14 DO YOU USE OR REFER TO THE SCHEMATIC SYMBOLS WHICH REPRESENT BATTERIES, FUSES, CONDUCTORS, LAMPS, OR SWITCHES	53	50	100
A 38	A3-15 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES RESISTIVE CIRCUITS.	37	38	0
A 39	A3-16 DO YOU CALCULATE TOTAL CURRENT FOR SERIES RESISTIVE CIRCUITS.	31	32	0
A 40	A3-17 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES RESISTIVE CIRCUITS.	39	38	0
A 41	A3-18 DO YOU CALCULATE POWER DISSIPATION FOR SERIES RESISTIVE CIRCUITS.	25	25	0
A 42	A3-19 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES PARALLEL RESISTIVE CIRCUITS.	38	38	0
A 43	A3-20 DO YOU CALCULATE TOTAL CURRENT FOR SERIES PARALLEL RESISTIVE CIRCUITS.	32	32	0
A 44	A3-21 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES PARALLEL RESISTIVE CIRCUITS.	38	38	0
A 45	A3-22 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR SERIES PARALLEL RESISTIVE CIRCUITS.	31	31	0
A 46	A3-23 DO YOU CALCULATE POWER DISSIPATION FOR SERIES PARALLEL RESISTIVE CIRCUITS.	24	25	0
A 47	A3-24 DO YOU CALCULATE TOTAL RESISTANCE FOR PARALLEL RESISTIVE CIRCUITS.	37	36	0
A 48	A3-25 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RESISTIVE CIRCUITS.	31	32	0
A 49	A3-26 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR PARALLEL RESISTIVE CIRCUITS.	34	34	0
A 50	A3-27 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR PARALLEL RESISTIVE CIRCUITS.	30	30	0
A 51	A3-28 DO YOU CALCULATE POWER DISSIPATION FOR PARALLEL RESISTIVE CIRCUITS.	23	23	0
B 52	B1-01 DO YOU MEASURE RESISTANCE.	52	50	100
B 53	B1-02 DO YOU REPAIR OHMMETERS.	4	4	0
B 54	B1-03 DO YOU MEASURE VOLTAGE.	52	50	100
B 55	B1-04 DO YOU REPAIR VOLTMETERS.	2	2	0
B 56	B1-05 DO YOU REPAIR AMMETERS.	2	3	0
B 57	B1-06 DO YOU MEASURE CURRENT.	43	43	100
B 58	B1-07 DO YOU USE MULTIMETERS.	53	50	100
B 59	B1-08 DO YOU DIRECTLY USE A QUANTITY OF CHARGE CALLED A COULOMB.	3	3	0
A 60	B1-09 DO YOU READ SCHEMATICS.	53	50	100

MULTIMETER USES

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

	SPC 001	SPC 002	SPC 002	SPC 002	ALTERNATING CURRENT
9 61 82-01 DO YOU USE OR REFER TO THE TERM EFFECTIVE VOLTAGE (RMS)?	36	34	100		
8 62 82-02 DO YOU USE OR REFER TO THE TERM PEAK TO PEAK VOLTAGE?	35	33	100		
8 63 82-03 DO YOU USE OR REFER TO THE TERM AVERAGE VOLTAGE (DC)?	37	36	100		
8 64 82-04 DO YOU USE OR REFER TO THE TERM WAVE LENGTH.	16	15	100		
8 65 82-05 DO YOU USE OR REFER TO THE TERM FREQUENCY.	40	38	100		
8 66 82-06 DO YOU USE OR REFER TO THE TERM INSTANTANEOUS VALUE.	18	17	50		
8 67 83-01 DO YOU WORK WITH INDUCTORS OR CIRCUITS CONTAINING INDUCTORS, CHOKES, OR CHOKE COILS IN YOUR PRESENT JOB.	34	33	0		
8 68 83-02 DO YOU INSPECT INDUCTORS.	31	30	0		
8 69 83-03 DO YOU CLEAN INDUCTORS.	19	20	0		
8 70 83-04 DO YOU ADJUST INDUCTORS.	19	19	0		
8 71 83-05 DO YOU REMOVE OR REPLACE INDUCTORS.	32	31	0		
8 72 83-06 DO YOU USE OR REFER TO INDUCTANCE.	25	26	0		
8 73 83-07 DO YOU USE OR REFER TO HENRIES.	23	22	0		
8 74 83-08 DO YOU USE OR REFER TO INDUCTIVE REACTANCE.	23	23	0		
8 75 83-09 DO YOU USE OR REFER TO COPPER LOSS IN INDUCTORS.	5	5	0		
8 76 83-10 DO YOU USE OR REFER TO HYSTERESIS LOSS IN INDUCTORS.	7	7	0		
8 77 83-11 DO YOU USE OR REFER TO EDDY CURRENT LOSS IN INDUCTORS.	8	9	0		
8 78 83-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTANCE IS PROPORTIONAL TO THE SQUARE OF THE NUMBER OF TURNS OF THE COIL.	10	9	0		
8 79 83-13 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.	7	7	0		
8 80 83-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS INVERSELY PROPORTIONAL TO ITS LENGTH.	7	7	0		
8 81 83-15 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.	8	8	0		
8 82 83-16 DO YOU CALCULATE INDUCTANCE FOR PARTICULAR INDUCTORS USING FORMULAS.	7	4	0		
8 83 83-17 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTANCE IN SERIES.	6	6	0		
8 84 83-18 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN PARALLEL.	6	6	0		
8 85 83-19 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES-PARALLEL CIRCUITS.	6	6	0		
8 86 83-20 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LAGS VOLTAGE IN AC INDUCTOR CIRCUITS.	15	15	0		
8 87 83-21 DO YOU CALCULATE INDUCTIVE REACTANCE.	7	7	0		
8 88 83-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTIVE REACTANCE IS DIRECTLY PROPORTIONAL TO FREQUENCY.	13	12	0		
8 89 83-23 DO YOU WORK WITH POWER INDUCTORS.	21	21	0		
8 90 83-24 DO YOU WORK WITH AUDIO FREQUENCY INDUCTORS.	16	14	0		
8 91 83-25 DO YOU WORK WITH RADIO FREQUENCY INDUCTORS.	5	4	0		

INDUCTORS AND
INDUCTIVE REACTANCE

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

GPSUM PAGE 5

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		SPC		SPC		SPC	
		001		002		003	
C 92 C1-01 DO YOU WORK WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS IN YOUR PRESENT JOB.		46	45	50			
C 93 C1-02 DO YOU INSPECT CAPACITORS.		47	44	100			
C 94 C1-03 DO YOU CLEAN CAPACITORS.		24	25	50			
C 95 C1-04 DO YOU ADJUST CAPACITORS.		31	32	0			
C 96 C1-05 DO YOU TEST CAPACITORS.		43	42	0			
C 97 C1-06 DO YOU DISCHARGE CAPACITORS.		46	44	100			
C 98 C1-07 DO YOU REMOVE OR REPLACE CAPACITORS.		51	49	100			
C 99 C1-08 DO YOU USE OR REFER TO DISTRIBUTED CAPACITANCE.		9	9	0			
C 100 C1-09 DO YOU USE OR REFER TO ORBITAL STRESS OF ELECTRONS IN A DIELECTRIC.		2	3	0			
C 101 C1-10 DO YOU USE OR REFER TO FARADS, MICROFARADS, OR PICOFARADS.		45	44	50			CAPACITORS AND CAPACITIVE REACTANCE
C 102 C1-11 DO YOU USE OR REFER TO CAPACITANCE.		51	49	100			
C 103 C1-12 DO YOU USE OR REFER TO DIELECTRIC CONSTANT		7	7	0			
C 104 C1-13 DO YOU USE OR REFER TO WORKING VOLTAGE RATING OF CAPACITORS		40	39	50			
C 105 C1-14 DO YOU USE OR REFER TO CAPACITIVE REACTANCE		24	24	0			
C 106 C1-15 DO YOU USE OR REFER TO CAPACITOR COLOR CODES		28	28	50			
C 107 C1-16 DO YOU WORK WITH CAPACITORS IN DC CIRCUITS		50	49	100			
C 108 C1-17 DO YOU WORK WITH CAPACITORS IN AC CIRCUITS		45	42	100			
C 109 C1-18 DO YOU WORK WITH CAPACITORS IN CIRCUITS WITH BOTH DC AND AC		41	40	50			
C 110 C1-19 DO YOU WORK WITH CAPACITORS IN DON'T REMEMBER WHICH CIRCUITS		10	9	0			
C 111 C1-20 DO YOU CALCULATE CAPACITANCE FOR PARTICULAR CAPACITORS USING FORMULAS		11	10	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		7	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		7	7	0			
C 114 C1-23 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES		20	20	0			
C 115 C1-24 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN PARALLEL		20	20	0			
C 116 C1-25 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES-PARALLEL CIRCUITS		20	20	0			
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		26	26	0			
C 118 C1-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEADS VOLTAGE IN AC CAPACITOR CIRCUITS		21	21	0			
C 119 C1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITIVE REACTANCE IS INVERSELY PROPORTIONAL TO FREQUENCY		18	17	0			
C 120 C1-29 DO YOU CALCULATE CAPACITIVE REACTANCE		15	15	0			

04-75TX

PCT MBS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMINGSPC SPC SPC
001 002 003

DY-TSK

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 OR 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

PCT MURS RESPONDING 'YES' BY SELECTED GRPS

GPSUMI PAGE 7

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

SPC SPC SPC
D01 D02 D03

C 152 C2-25 DO YOU REFER TO MULTIPLE SECONDARY-WINDINGS SCHEMATIC SYMBOLS FOR TRANSFORMERS	36	35	0
C 153 C2-26 DO YOU REFER TO MULTIPLE TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS	37	37	0
C 154 C2-27 DO YOU REFER TO CENTER TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS	38	37	0
C 155 C2-28 DO YOU REFER TO AIR CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS	20	21	0
C 156 C2-29 DO YOU REFER TO IRON CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS	23	23	0
C 157 C2-30 DO YOU REFER TO COMBINATIONS OF THE ABOVE SCHEMATIC SYMBOLS FOR TRANSFORMERS	25	26	0
C 158 C2-31 DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING SCHEMATIC SYMBOLS	22	21	0
C 159 C2-32 DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN TRANSFORMERS YOU WORK WITH	10	10	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 FOR TRANSFORMERS	18	17	0
C 161 C2-34 DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN RATIOS FOR TRANSFORMERS	22	22	0
C 162 C2-35 DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS USING TURNS RATIOS	15	15	0
C 163 C2-36 DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS USING TURNS RATIOS	11	11	0
C 164 C2-37 DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH THREE PHASE TRANSFORMERS	20	21	0
C 165 C2-38 DO YOU INSPECT THREE PHASE TRANSFORMERS	17	18	0
C 166 C2-39 DO YOU CLEAN OR LUBRICATE THREE PHASE TRANSFORMERS	7	7	0
C 167 C2-40 DO YOU ADJUST THREE PHASE TRANSFORMERS	6	6	0
C 168 C2-41 DO YOU TROUBLESHOOT THREE PHASE TRANSFORMERS	18	18	0
C 169 C2-42 DO YOU REMOVE OR REPLACE COMPLETE THREE PHASE TRANSFORMERS	17	17	0
C 170 C2-43 DO YOU REMOVE OR REPLACE THREE PHASE TRANSFORMER POINTS SUCH AS WINDINGS	4	4	0
C 171 C3-01 DO YOU USE OR REFER TO PERMANENT MAGNETS	20	21	0
C 172 C3-02 DO YOU USE OR REFER TO TEMPORARY MAGNETS	16	15	0
C 173 C3-03 DO YOU USE OR REFER TO RETENTIVITY OF MAGNETIC MATERIALS	4	4	0
C 174 C3-04 DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC MATERIALS	2	3	0
C 175 C3-05 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS	3	3	0
C 176 C3-06 DO YOU USE OR REFER TO RESIDUAL MAGNETISM	8	8	0
C 177 C3-07 DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE OR FLUX	11	12	0
C 178 C3-08 DO YOU USE OR REFER TO HEBER'S THEORY OF MAGNETISM	2	2	0

MAGNETISM

PCT MEMS RESPONDING 'YES' BY SELECTED GRPS

GFSUM PAGE 8

TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

01-TSK

	SPC 001	SPC 002	SPC 003
C 179 C3-09 DO YOU USE OR REFER TO DRAIN THEORY OF MAGNETISM	2	2	0
C 180 C3-10 DO YOU USE OR REFER TO MAGNETIC INDUCTION	5	5	0
C 181 C3-11 DO YOU USE OR REFER TO FLUX DENSITY	2	3	0
C 182 C3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT FOR MAGNETIC POLES, LIKE POLES REPEL AND UNLIKE POLES ATTRACT	28	27	0
C 183 C3-13 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE DIRECTION OF MAGNETIC FIELDS ABOUT STRAIGHT WIRES	4	4	0
C 184 C3-14 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE NORTH POLE OF A CURRENT CARRYING COIL	8	8	0
D 185 D1-01 DO YOU WORK WITH RCL CIRCUITS IN YOUR PRESENT JOB	29	29	0
D 186 D1-02 DO YOU USE OR REFER TO VECTORS WHEN WORKING WITH RCL CIRCUITS	9	9	0
D 187 D1-03 DO YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN WORKING WITH RCL CIRCUITS	7	7	0
D 188 D1-04 DO YOU USE OR REFER TO SINE WHEN WORKING WITH RCL CIRCUITS	20	21	0
D 189 D1-05 DO YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL CIRCUITS	20	21	0
D 190 D1-06 DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL CIRCUITS	9	9	0
D 191 D1-07 DO YOU USE OR REFER TO WATTS WHEN WORKING WITH RCL CIRCUITS	19	19	0
D 192 D1-08 DO YOU USE OR REFER TO TRUE POWER (PT) WHEN WORKING WITH RCL CIRCUITS	5	4	0
D 193 D1-09 DO YOU USE OR REFER TO MAXIMUM POWER (PM) WHEN WORKING WITH RCL CIRCUITS	7	6	0
D 194 D1-10 DO YOU USE OR REFER TO AVERAGE POWER (PAVE) WHEN WORKING WITH RCL CIRCUITS	6	5	0
D 195 D1-11 DO YOU USE OR REFER TO APPARENT POWER (PA) WHEN WORKING WITH RCL CIRCUITS	7	6	0
D 196 D1-12 DO YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING WITH RCL CIRCUITS	6	6	0
D 197 D1-13 DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN WORKING WITH RCL CIRCUITS	11	11	0
D 198 D1-14 DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH RCL CIRCUITS	5	4	0
D 199 D1-15 DO YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH RCL CIRCUITS	6	5	0
D 200 D1-16 DO YOU USE OR REFER TO RESONANT FREQUENCY WHEN WORKING WITH RCL CIRCUITS	10	9	0
D 201 D1-17 DO YOU USE OR REFER TO HALF POWER POINTS WHEN WORKING WITH RCL CIRCUITS	4	4	0
D 202 D1-18 DO YOU USE OR REFER TO BANDPASS REGION WHEN WORKING WITH RCL CIRCUITS	6	5	0
D 203 D1-19 DO YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH RCL CIRCUITS	3	3	0

RCL CIRCUITS

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC
001 002 003

LT-TSK

0 204 DI-20 DO YOU USE OR REFER TO TANK CIRCUITS WHEN WORKING WITH RCL CIRCUITS 15 15 0

0 205 DI-21 DO YOU DETERMINE VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS 7 7 0

0 206 DI-22 DO YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS 5 4 0

0 207 DI-23 DO YOU CALCULATE TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS 11 11 0

0 208 DI-24 DO YOU CALCULATE PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS 5 5 0

0 209 DI-25 DO YOU CALCULATE TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS 8 9 0

0 210 DI-26 DO YOU CALCULATE IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS 2 3 0

0 211 DI-27 DO YOU CALCULATE APPARENT POWER (PA) FOR SERIES RCL CIRCUITS 3 3 0

0 212 DI-28 DO YOU CALCULATE TRUE POWER (PT) FOR SERIES RCL CIRCUITS 3 3 0

0 213 DI-29 DO YOU CALCULATE POWER FACTORS (PF) FOR SERIES RCL CIRCUITS 2 3 0

0 214 DI-30 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RCL CIRCUITS 10 9 0

0 215 DI-31 DO YOU CALCULATE IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS 2 3 0

0 216 DI-32 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING THE ASSUMED VOLTAGE METHOD 6 5 0

0 217 DI-33 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING OHM'S LAW 11 11 0

0 218 DI-34 DO YOU CHECK CAPACITORS USING OHMMETERS 30 30 0

0 219 DI-35 DO YOU CHECK CAPACITORS USING SUBSTITUTION 26 26 0

0 220 DI-36 DO YOU CHECK INDUCTORS USING OHMMETERS 25 25 0

0 221 DI-37 DO YOU CHECK INDUCTORS USING SUBSTITUTION 19 18 0

0 222 DI-38 DO YOU USE OR REFER TO THE GENERAL RULE THAT $\theta = 0$, $PF = 1$, AND $PA = PT$ FOR RESONANT CIRCUITS 1 1 0

0 223 DI-39 DO YOU CALCULATE RESONANT FREQUENCIES FOR RCL CIRCUITS 5 4 0

0 224 DI-40 DO YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE RESONANT FREQUENCY FOR SERIES RCL CIRCUITS 7 7 0

0 225 DI-41 DO YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT RESONANT FREQUENCY FOR PARALLEL RCL CIRCUITS 9 9 0

0 226 DI-42 DO YOU USE OR REFER TO THE GENERAL RULE THAT HALF POWER POINTS ARE AT 70.7 PERCENT OF THE PEAK CURRENT VALUE 6 6 0

0 227 DI-43 DO YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO Q 2 2 0

0 228 DI-44 DO YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE, CAPACITANCE, OR INDUCTANCE WILL AFFECT CURRENT OR PHASE ANGLES FOR RCL CIRCUITS 9 9 0

PCT MBS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

SPC	SPC	SPC	SPC
001	002	003	003
0 229	02-01	DO YOU PRESENT JOB, DO YOU WORK WITH, USE, OR REFER TO SERIES OR PARALLEL RESONANT CIRCUITS OR TIME CONSTANTS	9 0 0
0 230	02-02	DO YOU WORK WITH, USE, OR REFER TO TIME CONSTANTS	11 10 0
0 231	02-03	DO YOU WORK WITH, USE, OR REFER TO AVAILABLE VOLTAGE	7 0 0
0 232	03-04	DO YOU WORK WITH, USE, OR REFER TO TRANSIENT INTERVALS	5 4 0
0 233	02-05	DO YOU USE OR REFER TO THE GENERAL RULE THAT A CAPACITOR IS FULLY CHARGED (OR DISCHARGED) AFTER FIVE (5) TIME CONSTANTS (TC)	7 0 0
0 234	02-06	DO YOU USE OR REFER TO UNIVERSAL TIME CONSTANT CHARTS	1 1 0
0 235	02-07	DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CIRCUIT CURRENT OR COMPONENT VOLTAGES AFTER A SPECIFIC TIME FOR RC OR LR CIRCUITS	4 3 0
0 236	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	4 3 0
0 237	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	4 3 0
0 238	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	3 3 0
0 239	03-01	DO YOU WORK WITH CIRCUITS USED AS FILTERS IN YOUR PRESENT JOB	31 29 0
0 240	03-02	DO YOU INSPECT FILTER CIRCUITS	24 24 0
0 241	03-03	DO YOU CLEAN FILTER CIRCUITS	20 21 0
0 242	03-04	DO YOU ALIGN OR ADJUST FILTER CIRCUITS	20 20 0
0 243	03-05	DO YOU TROUBLESHOOT TO THE FILTER CIRCUIT LEVEL	24 22 0
0 244	03-06	DO YOU TROUBLESHOOT TO COMPONENT PARTS	28 26 0
0 245	03-07	DO YOU REMOVE OR REPLACE THE COMPLETE FILTER CIRCUIT	24 23 0
0 246	03-08	DO YOU REMOVE OR REPLACE FILTER CIRCUIT COMPONENT PARTS	27 26 0
0 247	03-09	DO YOU WORK WITH LOW PASS FILTERS	15 14 0
0 248	03-10	DO YOU WORK WITH HIGH PASS FILTERS	11 12 0
0 249	03-11	DO YOU WORK WITH BANDPASS FILTERS	11 9 0
0 250	03-12	DO YOU WORK WITH BAND-REJECT FILTERS	4 4 0
0 251	03-13	DON'T REMEMBER WHICH TYPE OF FILTER YOU WORK WITH	15 14 0
0 252	03-14	DO YOU WORK WITH L-SECTION FILTER CONFIGURATION	11 10 0
0 253	03-15	DO YOU WORK WITH T-SECTION FILTER CONFIGURATION	12 12 0
0 254	03-16	DO YOU WORK WITH PI-SECTION FILTER CONFIGURATION	11 11 0
0 255	03-17	DON'T REMEMBER WHICH TYPE FILTER CONFIGURATION	15 14 0
0 256	03-18	DO THE FILTERS YOU WORK WITH USE PARALLEL RESONANT CIRCUITS	16 15 0
0 257	03-19	DO THE FILTERS YOU WORK WITH USE SERIES-PARALLEL CIRCUITS	18 17 0
0 258	03-20	DO THE FILTERS YOU WORK WITH USE SERIES RESONANT CIRCUITS	15 14 0

FILTERS

SERIES AND
PARALLEL RESONANCE
(TIME CONSTANTS)

PCT MEMS RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC
001 002 003

BY-TASK

0 259 03-21 DON'T REMEMBER WHICH TYPE OF BASIC CIRCUIT
0 260 03-22 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE
CAPACITANCE OR INDUCTANCE VALUES REQUIRED FOR SPECIFIC
FILTERS

E 261 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 RC
COUPLING

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

E 264 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 RC COUPLING

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

E 267 E1-07 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS
WHICH PERFORM TRANSFORMER COUPLING

E 268 E1-08 DO YOU WORK WITH DIRECTLY COUPLED CIRCUITS
E 269 E1-09 DO YOU WORK WITH CAPACITIVE-RESISTIVE COUPLED
CIRCUITS

E 270 E1-10 DO YOU WORK WITH CAPACITIVE-INDUCTIVE COUPLED
CIRCUITS

E 271 E1-11 DO YOU WORK WITH TRANSFORMER COUPLED CIRCUITS
E 272 E1-12 DON'T REMEMBER WHICH TYPE OF COUPLING CIRCUITS

E 273 E2-01 IN YOUR PRESENT JOB, DO YOU PERFORM SOLDERING
TECHNIQUES OR INSPECT OR EVALUATE SOLDERED CONNECTIONS

E 274 E2-02 DO YOU SELECT TYPE OF SOLDER TO USE
E 275 E2-03 DO YOU ADD FLUX TO CONNECTIONS

E 276 E2-04 DO YOU CLEAN CONNECTIONS USING SOLVENTS
E 277 E2-05 DO YOU STRIP INSULATION FROM WIRES

E 278 E2-06 DO YOU CONNECT OR DISCONNECT HEAT SINKS
E 279 E2-07 DO YOU BEND OR SHAPE WIRES OR LEADS

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

E 282 E2-10 DO YOU TIN SOLDERING IRON TIPS
E 283 E2-11 DO YOU CLEAN SOLDERING IRON TIPS

E 284 E2-12 DO YOU CLEAN ELECTRICAL SURFACES USING ERASERS
E 285 E2-13 DO YOU TIN ON PRE-TIN CONDUCTORS

E 286 E2-14 DO YOU INSPECT SOLDERED CONNECTIONS
E 287 E2-15 DO YOU DESOLDER CONNECTIONS BY WICKING
E 288 E2-16 DO YOU DESOLDER CONNECTIONS USING VACUUM DESOLDERING
TOOLS

E 289 E2-17 DO YOU CUT COMPONENT LEADS TO REMOVE COMPONENTS
E 290 E2-18 DO YOU CRUSH COMPONENTS FOR REMOVAL

COUPLING

SOLDERING

PCT MEMS RESPONDING 'YES' BY SELECTED GMPs

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMINGSPC SPC SPC
001 002 003

DY-TRK

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

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

F 315 F1-02 DO YOU INSPECT MICROPHONES

F 316 F1-03 DO YOU CLEAN MICROPHONES

F 317 F1-04 DO YOU OPERATE MICROPHONES

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

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

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

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

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

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

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

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

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

RELAYS

MICROPHONES

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

GPSUM PAGE 13

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC
001 002 003

CV-TSK

F 327 F2-01 DO YOU PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH SPEAKERS	38	37	100	
F 328 F2-02 DO YOU INSPECT SPEAKERS	33	31	100	
F 329 F2-03 DO YOU CLEAN SPEAKERS	24	22	100	
F 330 F2-04 DO YOU OPERATE SPEAKERS	36	35	100	
F 331 F2-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT PARTS OF SPEAKERS	30	30	50	
F 332 F2-06 DO YOU TROUBLESHOOT DOWN TO SPEAKER PARTS	13	13	50	SPEAKERS
F 333 F2-07 DO YOU REMOVE OR REPLACE COMPLETE SPEAKERS	33	31	100	
F 334 F2-08 DO YOU REMOVE OR REPLACE SPEAKER PARTS	6	4	100	
F 335 F2-09 DO YOU PERFORM ANY TASKS ON SPEAKER CONES	3	3	0	
F 336 F2-10 DO YOU PERFORM ANY TASKS ON SPEAKER SPIDERS	2	2	0	
F 337 F2-11 DO YOU PERFORM ANY TASKS ON SPEAKER FIELD COILS	2	3	0	
F 338 F2-12 DO YOU PERFORM ANY TASKS ON SPEAKER VOICE COILS	4	4	0	
F 339 F2-13 DO YOU PERFORM ANY TASKS ON SPEAKER PERMANENT MAGNETS	3	3	0	
F 340 F2-14 DO YOU PERFORM ANY TASKS ON SPEAKER ELECTROMAGNETS	3	3	0	
F 341 F2-15 DO YOU PERFORM ANY TASKS ON SPEAKER SOFT IRON CORES	2	2	0	
F 342 F3-01 DO YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB	45	43	100	
F 343 F3-02 DO YOU USE OSCILLOSCOPES TO PERFORM OPERATIONAL CHECKS	41	38	100	
F 344 F3-03 DO YOU USE OSCILLOSCOPES TO PERFORM ALIGNMENTS OR ADJUSTMENTS	42	40	100	
F 345 F3-04 DO YOU USE OSCILLOSCOPES TO TROUBLESHOOT ELECTRONIC CIRCUITS	43	41	100	OSCILLOSCOPES
F 346 F3-05 DO YOU USE OSCILLOSCOPES TO MEASURE FREQUENCY	33	30	100	
F 347 F3-06 DO YOU USE OSCILLOSCOPES TO MEASURE TIME	23	21	100	
F 348 F3-07 DO YOU USE OSCILLOSCOPES TO OBSERVE LISAJOUS PATTERNS	20	19	50	
F 349 F3-08 DO YOU USE OSCILLOSCOPES TO OBSERVE SIGNALS WHILE UTILIZING ATTENUATOR PROBES	31	29	100	
F 350 F3-09 DO YOU USE OSCILLOSCOPES TO MAKE FREQUENCY OR TIME MEASUREMENTS USING DELAY TIME MULTIPLIERS	23	21	100	
F 351 F3-10 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE	36	34	100	
F 352 F3-11 DO YOU USE OSCILLOSCOPES TO MEASURE OR OBSERVE SIGNALS AFTER FIRST ADJUSTING THE GAIN AND DC HAL CONTROLS	32	29	100	
F 353 F3-12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE	34	34	100	
G 354 G1-01 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT JOB	41	41	0	
G 355 G1-02 DO YOU INSPECT DIODES	41	39	100	
G 356 G1-03 DO YOU REMOVE OR REPLACE DIODES	43	41	100	SEMICONDUCTOR DIODES
G 357 G1-04 DO YOU CHECK DIODES USING AN INSTRUMENT	38	37	50	
G 358 G1-05 DO YOU USE ENERGY LEVEL DIAGRAMS IN YOUR WORK WITH DIODES	2	3	0	
G 359 G1-06 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES, TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE, TO COMPUTE FORWARD OR REVERSE BIAS RESISTANCE	7	6	100	
G 360 G1-07 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR DIODES	11	10	100	

PCT MARS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

QY-TSK

Q	SPC	SPC	SPC
	001	002	003
361	31	30	100
362	39	38	50
363	11	11	50
364	20	19	100
365	23	22	0
366	2	3	0
367	2	3	0
368	14	12	100
369	2	3	0
370	2	3	0
371	20	19	50
372	3	3	0
373	2	3	0
374	2	3	0
375	4	4	0
376	3	3	0
377	37	35	100
378	14	13	0
379	19	17	100
380	7	5	100
381	28	26	100
382	4	4	0

Q 361 G1-08 DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES

Q 362 G1-09 DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO OTHER ELECTRONIC COMPONENTS, SUCH AS RESISTORS, BASED ON THEIR PHYSICAL APPEARANCE

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

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

Q 365 G1-12 DO YOU USE OR REFER TO DIODE COLOR CODING

Q 366 G1-13 DO YOU USE OR REFER TO CENTRIFUGAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS

Q 367 G1-14 DO YOU USE OR REFER TO CENTRIPETAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS

Q 368 G1-15 DO YOU USE OR REFER TO DIODE NUMBERING SYSTEM, SUCH AS IN 528

Q 369 G1-16 DO YOU USE OR REFER TO KINETIC ENERGY OF AN ELECTRON MOVING IN ORBIT

Q 370 G1-17 DO YOU USE OR REFER TO POTENTIAL ENERGY OF AN ELECTRON MOVING IN ORBIT

Q 371 G1-18 DO YOU USE OR REFER TO MEASUREMENTS OF REVERSE BIAS RESISTANCE

Q 372 G1-19 DO YOU USE OR REFER TO NUMBER OF ELECTRONS IN A PARTICULAR SHELL OR ORBIT

Q 373 G1-20 DO YOU USE OR REFER TO PERMISSIBLE ENERGY LEVELS OF AN ORBITING ELECTRON

Q 374 G1-21 DO YOU USE OR REFER TO FORBIDDEN ENERGY LEVELS OF AN ORBITING ELECTRON

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

Q 376 G1-23 DO YOU USE OR REFER TO ATOMIC NUMBER (TOTAL NUMBER OF ELECTRONS IN ATOM)

Q 377 G1-24 DO YOU USE OR REFER TO SYMBOLS ON THE DIODE WHICH INDICATE THE CATHODE END

Q 378 G1-25 DO YOU NEED TO KNOW WHICH MATERIALS ARE USED IN THE CONSTRUCTION OF DIODES SUCH AS GERMANIUM OR SILICON

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

Q 380 G1-27 DO YOU USE OR REFER TO PN JUNCTION DIODE CHARACTERISTIC CURVES, SUCH AS VOLTAGE - CURRENT CHARACTERISTIC CURVES (PERHAPS YOU DO THIS TO IDENTIFY POINTS OF STRUCTURAL BREAKDOWN OR OPERATING REGIONS)

Q 381 G1-28 DO YOU DETERMINE WHETHER PN JUNCTION DIODES ARE FORWARD BIASED OR REVERSE BIASED WHEN YOU READ OR INTERPRET CIRCUIT DIAGRAMS

Q 382 G1-29 DO YOU USE OR REFER TO VALENCE BAND IN SEMICONDUCTOR MATERIALS

PCT MEMS RESPONDING 'YES' BY SELECTED GRPS

GPSUM1 PAGE 15

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC
001 002 003

GY-TSR

G 363 G1-30 DO YOU USE OR REFER TO FORBIDDEN BAND IN
SEMICONDUCTOR MATERIALS 4 4 0

G 384 G1-31 DO YOU USE OR REFER TO CONDUCTION BAND IN
SEMICONDUCTOR MATERIALS 6 6 0

G 385 G1-32 DO YOU USE OR REFER TO COVALENT BONDING IN
SEMICONDUCTOR MATERIALS 3 3 0

G 386 G1-33 DO YOU USE OR REFER TO ELECTRON-HOLE PAIR CREATED IN
SEMICONDUCTORS 4 4 0

G 387 G1-34 DO YOU USE OR REFER TO ELECTRON FLOW OR HOLE FLOW IN
SEMICONDUCTORS 14 13 0

G 388 G1-35 DO YOU USE OR REFER TO DONOR IMPURITY IN
SEMICONDUCTORS 5 5 0

G 389 G1-36 DO YOU USE OR REFER TO ACCEPTOR IMPURITY IN
SEMICONDUCTORS 5 5 0

G 390 G1-37 DO YOU USE OR REFER TO P-TYPE SEMICONDUCTOR MATERIAL
G 391 G1-38 DO YOU USE OR REFER TO N-TYPE SEMICONDUCTOR MATERIAL 15 15 0

G 392 G1-39 DO YOU USE OR REFER TO MAJORITY CARRIERS IN
SEMICONDUCTORS 7 8 0

G 393 G1-40 DO YOU USE OR REFER TO MINORITY CARRIERS IN
SEMICONDUCTORS 7 8 0

G 394 G1-41 DO YOU USE OR REFER TO JUNCTION RECOMBINATION IN
SEMICONDUCTORS 5 5 0

G 395 G1-42 DO YOU USE OR REFER TO DEPLETION REGION IN
SEMICONDUCTORS 6 6 0

G 396 G1-43 DO YOU USE OR REFER TO RELATIONSHIP BETWEEN BARRIER
WIDTH AND DIFFERENCE OF POTENTIAL 7 7 0

G 397 G1-44 DO YOU USE OR REFER TO THE ICI BACK TO FRONT
RESISTANCE RATIO FOR DIODES 15 15 0

G 398 G1-45 DO YOU USE OR REFER TO BARRIER HEIGHT IN
SEMICONDUCTORS 4 4 0

G 399 G1-46 DO YOU USE OR REFER TO DIODE SUBSTITUTION
INFORMATION 22 22 0

G 400 G1-47 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD
CURRENT DIODE RATINGS 15 15 0

G 401 G1-48 DO YOU USE OR REFER TO PEAK RECURRENT FORWARD CURRENT
DIODE RATINGS 15 15 0

G 402 G1-49 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT DIODE
RATINGS 15 15 0

G 403 G1-50 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE
DIODE RATINGS 16 17 0

G 404 G2-01 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB.
G 405 G2-02 DO YOU INSPECT TRANSISTORS 43 42 100

G 406 G2-03 DO YOU REMOVE OR REPLACE TRANSISTORS 39 38 100

G 407 G2-04 DO YOU CHECK TRANSISTORS USING AN INSTRUMENT 44 43 100

G 408 G2-05 DO YOU USE OR REFER TO EMITTER - BASE (EB) FORWARD
AND REVERSE RESISTANCE MEASUREMENTS 39 38 50

G 409 G2-06 DO YOU USE OR REFER TO COLLECTOR - BASE (CB) FORWARD
AND REVERSE RESISTANCE MEASUREMENTS 35 34 100

TRANSISTORS

PCT HUNS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC	SPC	SPC	SPC
001	002	003	003
35	34	100	
15	15	50	
15	15	50	
24	23	50	
15	15	50	
41	41	50	
41	41	50	
28	28	50	
15	15	50	
23	21	50	
15	15	50	
11	9	50	
11	9	50	
9	9	50	
9	9	50	
8	8	50	
7	7	50	
7	7	50	
37	35	100	
36	34	100	
36	34	100	
36	34	100	
35	33	100	
37	35	100	
35	33	100	
11	9	100	
9	8	100	

TRANSISTOR AMPLIFIERS

410 G2-07 DO YOU USE OR REFER TO EMITTER - COLLECTOR (EC) RESISTANCE MEASUREMENTS

411 G2-08 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE EMITTER - BASE JUNCTION

412 G2-09 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE COLLECTOR - BASE JUNCTION

413 G2-10 DO YOU USE OR REFER TO THE PHYSICAL SIZE OF THE TRANSISTOR STRUCTURE (COLLECTOR, BASE AND EMITTER)

414 G2-11 DO YOU USE OR REFER TO LEAKAGE CURRENT (ICBO) IN A TRANSISTOR

415 G2-12 DO YOU USE OR REFER TO TRANSISTOR SCHEMATIC SYMBOLS

416 G2-13 DO YOU USE OR REFER TO TRANSISTOR NOTATION SUCH AS Q1, Q2, Q3, ETC

417 G2-14 DO YOU USE OR REFER TO TRANSISTOR SUBSTITUTION INFORMATION

418 G2-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE TRANSISTOR BASE CURRENT IS NORMALLY SIGNIFICANTLY SMALLER THAN THE EMITTER CURRENT (E USUALLY IS BEING 2 TO 8 PERCENT OF IE)

419 G2-16 DO YOU USE THE INFORMATION THAT THE EFFECT OF EMITTER BASE VOLTAGE ON BASE CURRENT IS THE CONTROLLING FACTOR FOR TRANSISTORS

420 G2-17 DO YOU USE THE GENERAL RULE THAT LEAKAGE CURRENT (ICBO) IN A TRANSISTOR INCREASES AS TEMPERATURE INCREASES

421 G2-18 DO YOU USE OR REFER TO TRANSISTOR CHARACTERISTIC CURVES

422 G2-19 DO YOU USE OR REFER TO BETA TRANSISTOR GAINS

423 G2-20 DO YOU USE OR REFER TO ALPHA TRANSISTOR GAINS

424 G2-21 DO YOU USE OR REFER TO GAMMA TRANSISTOR GAINS

425 G2-22 DO YOU CALCULATE BETA TRANSISTOR GAINS

426 G2-23 DO YOU CALCULATE ALPHA TRANSISTOR GAINS

427 G2-24 DO YOU CALCULATE GAMMA TRANSISTOR GAINS

428 G3-01 DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR PRESENT JOB

429 G3-02 DO YOU INSPECT TRANSISTOR AMPLIFIERS

430 G3-03 DO YOU ALIGN OR ADJUST TRANSISTOR AMPLIFIERS

431 G3-04 DO YOU TROUBLESHOOT TO THE AMPLIFIER CIRCUIT LEVEL

432 G3-05 DO YOU TROUBLESHOOT TO AMPLIFIER COMPONENTS

433 G3-06 DO YOU REMOVE OR REPLACE THE COMPLETE AMPLIFIER

434 G3-07 DO YOU REMOVE OR REPLACE AMPLIFIER COMPONENTS

435 G3-08 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A CHANGE IN BASE CURRENT

436 G3-09 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A SPECIFIC CHANGE IN BASE CURRENT

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC 001	SPC 002	SPC 003
6 437 G3-10 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A CHANGE IN BASE CURRENT	11	9	100
6 438 G3-11 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A SPECIFIC CHANGE IN BASE CURRENT	9	8	100
6 439 G3-12 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN BASE CURRENT WHICH RESULTS FROM AN INPUT SIGNAL	13	11	100
6 440 G3-13 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN BASE CURRENT WHICH RESULTS FROM A SPECIFIC INPUT SIGNAL	8	7	100
6 441 G3-14 DO YOU USE THE LOAD-LINE METHOD OF ANALYSIS IN YOUR CIRCUIT ANALYSIS (THIS METHOD REQUIRES YOU TO PLOT A LOAD-LINE ON A TRANSISTOR CHARACTERISTIC CURVE)	3	3	0
6 442 G3-15 DO YOU USE OR REFER TO THE OPERATING POINT Q (WILKESCENT POINT) FOR A TRANSISTOR	6	6	0
6 443 G3-16 DO YOU CALCULATE THE SPECIFIC QUIESCENT POINT FOR A PARTICULAR TRANSISTOR	2	3	0
6 444 G3-17 DO YOU MEASURE VOLTAGE GAIN USED IN THE COMMON EMITTER CONFIGURATION	21	19	100
6 445 G3-18 DO YOU MEASURE CURRENT GAIN USED IN THE COMMON EMITTER CONFIGURATION	14	12	100
6 446 G3-19 DO YOU MEASURE POWER GAIN USED IN THE COMMON EMITTER CONFIGURATION	12	10	100
6 447 G3-20 DO YOU CALCULATE THE VOLTAGE GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE IN BASE-EMITTER VOLTAGE INTO THE CHANGE THE BASE COLLECTOR VOLTAGE TO DETERMINE THE VOLTAGE GAIN	4	4	0
6 448 G3-21 DO YOU CALCULATE THE CURRENT GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE IN BASE CURRENT INTO THE CHANGE IN COLLECTOR CURRENT TO DETERMINE THE CURRENT GAIN	3	3	0
6 449 G3-22 DO YOU CALCULATE THE POWER GAIN FOR A SPECIFIC TRANSISTOR USING A FORMULA THAT IS, DO YOU MULTIPLY THE CURRENT GAIN TIMES THE VOLTAGE GAIN TO DETERMINE THE POWER GAIN	3	3	0
6 450 G3-23 DO YOU NEED TO KNOW THAT MORE COLLECTOR CURRENT IS GENERATED WITH LESS COLLECTOR VOLTAGE AS TEMPERATURE INCREASES (THIS AFFECTS THE STATIC OPERATING POINT Q) OF THE TRANSISTOR	3	3	0
6 451 G3-24 DO YOU COMPUTE THE STATIC OPERATING POINT (Q) OF A TRANSISTOR AT DIFFERENT TEMPERATURES	2	2	0
6 452 G3-25 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH EMITTER (SWAMPING) RESISTOR STABILIZATION	14	12	50
6 453 G3-26 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH SELF-BIAS STABILIZATION	13	11	50

DY-TSR

PCT MBRS RESPONDING *YES* BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		SPC	SPC	SPC
		DO1	DO2	DO3
454	G3-27 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH THERMISTOR STABILIZATION	6	5	0
455	G3-28 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH FORWARD BIAS DIODE STABILIZATION	11	11	0
456	G3-29 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH REVERSE BIAS DIODE STABILIZATION	10	10	0
457	G3-30 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH DOUBLE DIODE STABILIZATION	8	8	50
458	G3-31 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM EMITTER (SWAPPING) RESISTOR STABILIZATION	15	13	50
459	G3-32 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM SELF-BIAS STABILIZATION	11	9	50
460	G3-33 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THERMISTOR STABILIZATION	7	6	0
461	G3-34 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM FORWARD BIAS DIODE STABILIZATION	12	13	0
462	G3-35 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM REVERSE BIAS DIODE STABILIZATION	11	12	0
463	G3-36 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM DOUBLE DIODE STABILIZATION	8	8	50
464	G3-37 DO YOU IDENTIFY AMPLITUDE DISTORTION FOR TRANSISTOR CIRCUITS	11	9	50
465	G3-38 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF AMPLITUDE DISTORTION	11	9	50
466	G3-39 DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS	5	4	0
467	G3-40 DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS	4	3	0
468	G3-41 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF PHASE DISTORTION	5	4	0
469	G3-42 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF FREQUENCY DISTORTION	3	3	0
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	5	5	0
471	G3-44 DO YOU DETERMINE THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS	11	10	50
472	G3-45 DO YOU TROUBLESHOOT OR REPAIR PHASE AMPLIFIERS	7	8	0
473	G3-46 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	28	26	50
474	G3-47 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY CIRCUITS	10	9	0
475	G3-48 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	12	13	0

PERCENT MARRIAGES RESPONDING "YES" BY SELECTED GROUPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

MS-1-2-3

	JY-TSK	SPC SPC 001 002 003	SPECIAL PURPOSE DEVICES
6	76 03-49 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	15	15 0
7	77 11-01 DO YOU USE OR REFER TO VARACTORS	6	6 0
8	78 11-02 DO YOU USE OR REFER TO TUNNEL DIODES	9	9 0
9	79 11-03 DO YOU USE OR REFER TO FIELD EFFECT TRANSISTORS (FET)	24	24 50
10	80 11-04 DO YOU USE OR REFER TO UNIJUNCTION TRANSISTORS	14	13 0
11	81 11-05 DO YOU USE OR REFER TO ZENER DIODES	34	32 50
12	82 11-06 DO YOU USE OR REFER TO INTEGRATED CIRCUITS	35	33 50
13	83 12-01 IN YOUR PRESENT JOB DO YOU WORK WITH POWER SUPPLIES	46	44 50
14	84 12-02 DO YOU INSPECT POWER SUPPLIES	46	44 50
15	85 12-03 DO YOU CLEAN POWER SUPPLIES	40	39 50
16	86 12-04 DO YOU ALIGN OR ADJUST POWER SUPPLIES	44	44 50
17	87 12-05 DO YOU TROUBLESHOOT TO POWER SUPPLY CIRCUIT LEVEL	42	40 50
18	88 12-06 DO YOU TROUBLESHOOT TO POWER SUPPLY COMPONENTS	41	40 0
19	89 12-07 DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES	39	38 50
20	90 12-08 DO YOU REMOVE OR REPLACE POWER SUPPLY COMPONENTS	43	42 0
21	91 12-09 DO YOU WORK WITH HALF-WAVE RECTIFIERS	33	32 50
22	92 12-10 DO YOU WORK WITH FULL-WAVE RECTIFIERS OTHER THAN BRIDGE RECTIFIERS	39	38 50
23	93 12-11 DO YOU WORK WITH BRIDGE RECTIFIERS	37	36 50
24	94 12-12 DO YOU WORK WITH THREE-PHASE RECTIFIERS	21	21 50
25	95 12-13 DO YOU USE OR REFER TO INPUT VOLTAGE	42	40 50
26	96 12-14 DO YOU USE OR REFER TO INPUT FREQUENCY	24	21 50
27	97 12-15 DO YOU USE OR REFER TO PEAK OUTPUT VOLTAGE	30	28 50
28	98 12-16 DO YOU USE OR REFER TO AVERAGE OUTPUT VOLTAGE	32	30 50
29	99 12-17 DO YOU USE OR REFER TO RIPPLE AMPLITUDE	23	22 0
30	100 12-18 DO YOU USE OR REFER TO RIPPLE FREQUENCY	13	13 0
31	101 12-19 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE	19	18 0
32	102 12-20 DO YOU USE OR REFER TO SHAPE OF OUTPUT WAVEFORMS	28	26 50
33	103 12-21 DO YOU USE OR REFER TO EFFECTIVE OUTPUT VOLTAGE	34	32 50
34	104 12-22 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE FILTERS	35	34 0
35	105 12-23 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE FILTERS	28	27 0
36	106 12-24 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE INPUT L-TYPE FILTERS	24	23 0
37	107 12-25 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE INPUT L-TYPE FILTERS	18	19 0
38	108 12-26 DO YOU WORK WITH CIRCUITS WHICH EMPLOY LC PI-TYPE FILTERS	19	17 0
39	109 12-27 DO YOU WORK WITH CIRCUITS WHICH EMPLOY RC PI-TYPE FILTERS	21	21 0
40	110 12-28 DO YOU WORK WITH CIRCUITS WHICH EMPLOY DONAT REMEMBER WHICH TYPE OF FILTER	18	17 50
41	111 12-29 DO YOU HAVE THE OPTION OF REPLACING ONE TYPE OF FILTER WITH A DIFFERENT TYPE FILTER	5	4 0
42	112 13-01 DO YOU WORK WITH OSCILLATORS IN YOUR PRESENT JOB	26	25 0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

SPC SPC SPC
U01 U02 U03

M 513 H3-02 DO YOU INSPECT OSCILLATORS	24	23	0
M 514 H3-03 DO YOU ALIGN OR ADJUST OSCILLATORS	25	24	0
M 515 H3-04 DO YOU REMOVE OR REPLACE COMPLETE OSCILLATORS	21	21	0
M 516 H3-05 DO YOU REMOVE OR REPLACE OSCILLATOR COMPONENTS	25	25	0
M 517 H3-06 DO YOU TROUBLESHOOT TO OSCILLATOR CIRCUIT LEVEL	24	24	0
M 518 H3-07 DO YOU TROUBLESHOOT TO OSCILLATOR COMPONENTS	24	23	0
M 519 H3-08 DO YOU USE OR REFER TO FEEDBACK	26	25	0
M 520 H3-09 DO YOU USE OR REFER TO FREQUENCY DETERMINING DEVICES (FDD)	11	10	0
M 521 H3-10 DO YOU USE OR REFER TO AMPLITUDE STABILITY	13	14	0
M 522 H3-11 DO YOU USE OR REFER TO FREQUENCY STABILITY	11	9	0
M 523 H3-12 DO YOU USE OR REFER TO DAMPING	16	16	0
M 524 H3-13 DO YOU USE OR REFER TO REGENERATIVE FEEDBACK	20	21	0
M 525 H3-14 DO YOU USE OR REFER TO PIEZOELECTRIC EFFECT	3	3	0
M 526 H3-15 DO YOU USE OR REFER TO CRITICAL DAMPING	7	7	0
M 527 H3-16 DO YOU USE OR REFER TO UNDER DAMPING	8	9	0
M 528 H3-17 DO YOU USE OR REFER TO OVER DAMPING	8	9	0
M 529 H3-18 DO YOU WORK WITH OSCILLATORS WHICH USE LC TANK CIRCUITS AS FDD	11	12	0
M 530 H3-19 DO YOU WORK WITH OSCILLATORS WHICH USE RC NETWORKS AS FDD	16	15	0
M 531 H3-20 DO YOU WORK WITH OSCILLATORS WHICH USE CRYSTALS AS FDD	4	3	0
M 532 H3-21 DO YOU WORK WITH OSCILLATORS WHICH USE DON'T REMEMBER WHICH TYPE OF FDD	8	8	0
M 533 H3-22 DO YOU WORK WITH SERIES HARTLEY SINUSOIDAL OSCILLATORS	2	3	0
M 534 H3-23 DO YOU WORK WITH SHUNT HARTLEY SINUSOIDAL OSCILLATORS	2	2	0
M 535 H3-24 DO YOU WORK WITH COLPITTS SINUSOIDAL OSCILLATORS	4	3	0
M 536 H3-25 DO YOU WORK WITH CLAPP SINUSOIDAL OSCILLATORS	1	1	0
M 537 H3-26 DO YOU WORK WITH BUTLER SINUSOIDAL OSCILLATORS	1	1	0
M 538 H3-27 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF OSCILLATORS	12	12	0
I 539 11-01 DO YOU WORK WITH MULTIVIBRATORS IN YOUR PRESENT JOB	24	24	0
I 540 11-02 DO YOU INSPECT WAVE GENERATING OR SHAPING CIRCUITS	15	15	0
I 541 11-03 DO YOU ALIGN OR ADJUST WAVE GENERATING OR SHAPING CIRCUITS	13	13	0
I 542 11-04 DO YOU CALIBRATE WAVE GENERATING OR SHAPING CIRCUITS	11	11	0
I 543 11-05 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUITS	14	14	0
I 544 11-06 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUIT COMPONENTS	14	15	0
I 545 11-07 DO YOU REMOVE OR REPLACE COMPLETE WAVE GENERATING OR SHAPING CIRCUITS	15	15	0
I 546 11-08 DO YOU REMOVE OR REPLACE WAVE GENERATING OR SHAPING COMPONENTS	15	16	0
I 547 11-09 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK CIRCUITS	8	9	0

MULTIVIBRATORS

PERCENT HARS RESPONDING YES BY SELECTED GAPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

65-15088-1

	SPC	SPC	SPC	SPC
	001	002	003	004
37-TSK				
I 548 I-1-D DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN RC NETWORKS	11	11	0	0
I 549 I-1-E DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN CRYSTALS	2	3	0	0
I 550 I-1-F DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN DIODE REMEMBER WHICH TYPE OF FOD	7	8	0	0
I 551 I-1-G DO YOU WORK WITH ASTABLE MULTIVIBRATORS	11	9	0	0
I 552 I-1-H DO YOU WORK WITH MONOSTABLE MULTIVIBRATORS	8	7	0	0
I 553 I-1-I DO YOU WORK WITH BISTABLE MULTIVIBRATORS	19	18	0	0
I 554 I-1-J DO YOU WORK WITH DON'T REMEMBER WHICH TYPE MULTIVIBRATORS	5	5	0	0
I 555 I-2-A DO YOU WORK WITH LIMITERS OR CLAMPERS IN YOUR PRESENT JOB	29	28	50	50
I 556 I-2-B DO YOU WORK WITH SERIES DIODE LIMITERS	24	22	50	50
I 557 I-2-C DO YOU WORK WITH SHUNT DIODE LIMITERS	18	17	0	0
I 558 I-2-D DO YOU WORK WITH LIMITERS WITH BIAS	16	16	0	0
I 559 I-2-E DO YOU WORK WITH ZENER DIODE LIMITERS	19	17	50	50
I 560 I-2-F DO YOU WORK WITH TRANSISTOR LIMITERS	18	17	50	50
I 561 I-2-G DO YOU WORK WITH DON'T KNOW WHICH TYPE OF LIMITERS	7	7	0	0
I 562 I-2-H DO YOU WORK WITH BASIC DIODE CLAMPING CIRCUITS	12	11	50	50
I 563 I-2-I DO YOU WORK WITH DIODE CLAMPING CIRCUITS WITH BIAS	9	9	0	0
I 564 I-2-J DO YOU WORK WITH DON'T KNOW WHICH TYPE OF CLAMPING CIRCUIT	8	9	0	0
I 565 I-3-A IN YOUR PRESENT JOB, DO YOU WORK ON EQUIPMENT WHICH CONTAINS ELECTRON TUBES	44	44	0	0
I 566 I-3-B DO YOU CHECK ELECTRON TUBES TO SEE IF THEY ARE GOOD	44	44	0	0
I 567 I-3-C DO YOU USE TUBE TESTERS TO CHECK ELECTRON TUBES	45	44	0	0
I 568 I-3-D DO YOU USE SCOPES TO CHECK ELECTRON TUBES	29	29	0	0
I 569 I-3-E DO YOU USE SCOPES TO CHECK ELECTRON TUBES	17	18	0	0
I 570 I-3-F DO YOU USE SUBSTITUTION TO CHECK ELECTRON TUBES	41	40	0	0
I 571 I-3-G DO YOU USE OR REFER TO CUTOFF	17	17	0	0
I 572 I-3-H DO YOU USE OR REFER TO PEAK INVERSE VOLTAGE RATING	11	11	0	0
I 573 I-3-I DO YOU USE OR REFER TO PEAK CURRENT RATING	8	9	0	0
I 574 I-3-J DO YOU USE OR REFER TO TRANSIT TIME	4	4	0	0
I 575 I-3-K DO YOU USE OR REFER TO PLATE DISSIPATION RATING	7	7	0	0
I 576 I-3-L DO YOU USE OR REFER TO SATURATION	31	32	0	0
I 577 I-3-M DO YOU USE OR REFER TO DC PLATE RESISTANCE	14	15	0	0
I 578 I-3-N DO YOU COMPUTE ACTUAL VALUES OF THE DC PLATE RESISTANCE FOR ELECTRON TUBES	5	5	0	0
I 579 I-3-O DO YOU USE OR REFER TO PLATE VOLTAGE	33	33	0	0
I 580 I-3-P DO YOU USE OR REFER TO PLATE CURRENT	20	21	0	0
I 581 I-3-Q DO YOU USE OR REFER TO GRID VOLTAGE	31	32	0	0
I 582 I-3-R DO YOU USE OR REFER TO GRID CURRENT	19	19	0	0
I 583 I-3-S DO YOU USE OR REFER TO CATHODE VOLTAGE	32	32	0	0
I 584 I-3-T DO YOU USE OR REFER TO CATHODE CURRENT	20	20	0	0
I 585 I-3-U DO YOU USE OR REFER TO THE TRIODE AMPLIFICATION	8	9	0	0

WAS THE RATIO OF CHANGE IN PLATE VOLTAGE TO A CHANGE IN GRID VOLTAGE?

PCT MEMS RESPONDING 'YES' BY SELECTED GRPS

GPSUM1 PAGE 27

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

JY-TSK

SPC SPC SPC
001 002 003

1 586 13-22 DO YOU CALCULATE ACTUAL VALUES OF TRIODE
AMPLIFICATION FACTORS
1 587 13-23 DO YOU USE OR REFER TO MULTIGRID (TETRODE, PENTODE,
ETC) AMPLIFICATION FACTORS
1 588 13-24 DO YOU USE OR REFER TO ELECTRON TUBE TRANSCONDUCTANCE
(G, WHICH IS MEASURED IN MHOS)
1 589 13-25 DO YOU CALCULATE ACTUAL VALUES OF ELECTRON TUBE
TRANSCONDUCTANCES
1 590 13-26 DO YOU USE OR REFER TO THE ELECTRON TUBE PARAMETER
CALLED AC PLATE RESISTANCE
1 591 13-27 DO YOU CALCULATE ACTUAL VALUES OF AC PLATE
RESISTANCE
1 592 13-28 DO YOU USE OR REFER TO ELECTRON TUBE INTERELECTRODE
CAPACITANCE
1 593 13-29 DO YOU USE OR REFER TO CHARACTERISTIC CURVES IN YOUR
WORK WITH ELECTRON TUBES
1 594 13-30 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE
VOLTAGE FOR A SPECIFIED BIAS
1 595 13-31 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE
CURRENT FOR A SPECIFIED BIAS
1 596 13-32 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS
REQUIRED FOR CUTOFF
1 597 13-33 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS
REQUIRED FOR SATURATION
1 598 13-34 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER GAIN
1 599 13-35 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER
EFFICIENCY
1 600 13-36 DO YOU USE TEST TUBE CHECKERS TO DETERMINE ELECTRON
TUBE AMPLIFIER GAIN
1 601 13-37 DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE
AMPLIFIER GAIN
1 602 13-38 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE
AMPLIFIER GAIN
1 603 13-39 DO YOU USE CHARACTERISTIC CURVES TO DETERMINE
ELECTRON TUBE AMPLIFIER GAIN
1 604 13-40 DO YOU CALCULATE ANY ELECTRON TUBE CAPACITANCES SUCH
AS INPUT CAPACITANCE
1 605 13-41 DO YOU USE OR REFER TO TUBE SOCKET NOTATION
1 606 13-42 DO YOU USE OR REFER TO PIN NUMBERING SYSTEMS
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
1 608 13-44 DO YOU USE OR REFER TO TUBE SUBSTITUTION MATERIAL
SUCH AS MANUALS OR CHARTS
J 609 JI-01 DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS
IN YOUR PRESENT JOB
J 610 JI-02 DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON
TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER
CIRCUITS

ELECTRON TUBE
AMPLIFIERS
AND CIRCUITS

4 4 0
7 7 0
6 6 0
4 4 0
5 5 0
4 4 0
8 9 0
4 4 0
6 5 0
5 4 0
7 6 0
7 6 0
29 30 0
14 15 0
23 24 0
24 25 0
12 13 0
3 3 0
2 3 0
38 36 0
39 36 0
2 3 0
26 25 0
37 36 0
15 16 0

PCT MBS RESPONDING 'YES' b. ELECTED GAPS

GPSUM, PAGE 23

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

21-TSK

	SPC	SPC	SPC
	001	002	003
J 611 J1-03 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	7	7	0
J 612 J1-04 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	22	21	0
J 613 J1-05 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	12	13	0
J 614 J1-06 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	14	14	0
J 615 J1-07 DO YOU TROUBLESHOOT OR REPAIR UNIT KNOWN WHICH TYPE OF AMPLIFIER	16	16	0
J 616 J2-01 DO YOU WORK WITH GAS TUBES (HOT CATHODE OR COLD CATHODE)	26	26	0
J 617 J2-02 DO YOU WORK WITH CATHODE-RAY TUBES	12	12	0
J 618 J2-03 DO YOU USE OR REFER TO THE CHARACTERISTICS OF BEAM POWER TUBES	6	6	0
J 619 J2-04 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH BEAM POWER TUBES ARE USED	8	9	0
J 620 J2-05 DO YOU USE OR REFER TO THE CHARACTERISTICS OF THYRATONS	3	3	0
J 621 J2-06 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH THYRATONS ARE USED	5	5	0
J 622 J2-07 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTRON GUNS OF CATHODE-RAY TUBES (CRT)	4	4	0
J 623 J2-08 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROMAGNETIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)	2	3	0
J 624 J2-09 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)	2	3	0
J 625 J2-10 DO YOU USE OR REFER TO PHOSPHOR SCREENS	7	7	0
J 626 J2-11 DO YOU USE OR REFER TO AQUADAG COATINGS	1	1	0
J 627 J2-12 DO YOU USE OR REFER TO ELECTRON OPTICS	1	1	0
J 628 J2-13 DO YOU USE OR REFER TO PERSISTENCE	1	1	0
J 629 J2-14 DO YOU USE OR REFER TO DECAY TIMES	1	1	0
J 630 J2-15 DO YOU USE OR REFER TO FLUORESCENCE	2	2	0
J 631 J2-16 DO YOU USE OR REFER TO PHOSPHORESCENCE	1	1	0
J 632 J3-01 DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	2	2	0
J 633 J3-02 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	0	0	0
J 634 J3-03 DO YOU PERFORM TASKS ON FREQUENCY MIXERS	0	0	0
J 635 J3-04 DO YOU USE OR REFER TO THE HETERODYNING OF SIGNALS IN YOUR WORK WITH TRANSMIT OR RECEIVE SYSTEMS	0	0	0
J 636 J3-05 DO YOU PERFORM TASKS ON REACTANCE MODULATORS	0	0	0
J 637 J3-06 DO YOU PERFORM TASKS ON MODULATED OSCILLATORS	0	0	0
K 638 K1-01 DO YOU WORK ON A TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	0	0	0
K 639 K1-02 DO YOU INSPECT A TRANSMIT OR RECEIVE SYSTEMS	0	0	0
K 640 K1-03 DO YOU CLEAN A TRANSMIT OR RECEIVE SYSTEMS	0	0	0
K 641 K1-04 DO YOU ALIGN OR ADJUST A TRANSMIT OR RECEIVE SYSTEMS	0	0	0

SPECIAL PURPOSE
ELECTRON TUBES

HETERODYNING,
MODULATION, AND
DEMODULATION

AM SYSTEMS

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

0Y-TSK	SPC 001	SPC 002	SPC 003
K 642 KI-05 DO YOU TROUBLESHOOT TO AM TRANSMIT ON RECEIVE SYSTEMS	0	0	0
K 643 KI-06 DO YOU TROUBLESHOOT TO AM TRANSMIT ON RECEIVE	0	0	0
COMPONENTS			
K 644 KI-07 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE	0	0	0
SYSTEMS			
K 645 KI-08 DO YOU REMOVE OR REPLACE AM TRANSMIT ON RECEIVE	0	0	0
COMPONENTS			
K 646 KI-09 DO YOU PERFORM TASKS ON RF OSCILLATORS	0	0	0
K 647 KI-10 DO YOU PERFORM TASKS ON RF AMPLIFIERS	0	0	0
K 648 KI-11 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	0	0	0
K 649 KI-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS	0	0	0
K 650 KI-13 DO YOU PERFORM TASKS ON LOCAL OSCILLATORS	0	0	0
K 651 KI-14 DO YOU PERFORM TASKS ON IF AMPLIFIERS	0	0	0
K 652 KI-15 DO YOU PERFORM TASKS ON DETECTORS	0	0	0
K 653 KI-16 DO YOU PERFORM TASKS ON DON'T REMEMBER WHICH AM STAGL	0	0	0
K 654 KI-17 DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN	0	0	0
TRANSMITTERS			
K 655 KI-18 DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN	0	0	0
TRANSMITTERS			
K 656 KI-19 DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS	0	0	0
K 657 KI-20 DO YOU USE OR REFER TO SELECTIVITY OF RECEIVERS	0	0	0
K 658 KI-21 DO YOU USE OR REFER TO 2ND HARMONIC DISTORTION	0	0	0
K 659 KI-22 DO YOU USE OR REFER TO BANDPASS DISTORTION	0	0	0
K 660 KI-23 DO YOU USE OR REFER TO SQUARE LAW DISTORTION	0	0	0
K 661 KI-24 DO YOU USE OR REFER TO CO-CHANNEL INTERFERENCE	0	0	0
K 662 KI-25 DO YOU USE OR REFER TO IMAGE FREQUENCIES IN RECEIVERS	0	0	0
K 663 KI-26 DO YOU USE OR REFER TO SIGNAL TO IMAGE RATIOS OR	0	0	0
IMAGE REJECTION RATIOS			
K 664 KI-27 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM	0	0	0
TRANSMITTER SCHEMATIC DIAGRAMS			
K 665 KI-28 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM	0	0	0
RECEIVER SCHEMATIC DIAGRAMS			
K 666 KI-29 DO YOU WORK WITH FM TRANSMIT OR RECEIVE SYSTEMS IN	0	0	0
YOUR PRESENT JOB			
K 667 KI-30 DO YOU INSPECT FM TRANSMIT OR RECEIVE SYSTEMS	0	0	0
K 668 KI-31 DO YOU CLEAN FM TRANSMIT OR RECEIVE SYSTEMS	0	0	0
K 669 KI-32 DO YOU ALIGN FM TRANSMIT OR RECEIVE SYSTEMS	0	0	0
K 670 KI-33 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE	0	0	0
SYSTEMS			
K 671 KI-34 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE	0	0	0
COMPONENTS			
K 672 KI-35 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE	0	0	0
SYSTEMS			
K 673 KI-36 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE	0	0	0
COMPONENTS			
K 674 KI-37 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	0	0	0
K 675 KI-38 DO YOU PERFORM TASKS ON FREQUENCY MULTIPLIERS	0	0	0

FM SYSTEMS

PCT MBS RESPONDING 'YES' BY SELECTED GRPS

GPSUMI PAGE 27

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC
001 002 003

0Y-TSK

L 733 L3-01 DO YOU WORK WITH DIGITAL COUNTERS IN YOUR PRESENT JOB 12 10 50
L 734 L3-02 DO YOU USE OR REFER TO UP-COUNTERS 11 9 50
L 735 L3-03 DO YOU USE OR REFER TO DOWN-COUNTERS 10 8 50
L 736 L3-04 DO YOU USE OR REFER TO SERIAL COUNTERS 7 5 50
L 737 L3-05 DO YOU USE OR REFER TO PARALLEL COUNTERS 7 6 50
L 738 L3-06 DO YOU USE OR REFER TO RING COUNTERS 3 3 0
L 739 L3-07 DO YOU USE OR REFER TO DECADE COUNTERS 7 5 50
L 740 L3-08 DO YOU USE OR REFER TO COUNT DETECT CIRCUITS 7 5 50
L 741 L3-09 DO YOU USE OR REFER TO DOWN CLOCKS 8 7 50
L 742 L3-10 DO YOU USE OR REFER TO UP CLOCKS 9 8 50
L 743 L3-11 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS 7 6 50
L 744 L3-12 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-FLOPS 7 5 50
L 745 L3-13 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF DECADE COUNTERS 6 4 50
L 746 L3-14 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF RING COUNTERS 2 3 0
L 747 L3-15 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER 6 4 50
L 748 L3-16 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS 7 4 50
L 749 L3-17 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF COUNTERS 4 3 50
L 750 L3-18 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS 6 4 50
L 751 L3-19 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-FLOPS 5 3 50
L 752 L3-20 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER 5 3 50
L 753 L3-21 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR OTHER TYPES OF COUNTERS 6 4 50
L 754 L3-22 DO YOU CONSTRUCT TRUTH TABLES FROM LOGIC DIAGRAMS OF DECADE COUNTERS 4 3 50
L 755 L3-23 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP IN RING COUNTERS FOR SPECIFIC INPUT PULSES 2 3 0
L 756 L3-24 DO YOU DETERMINE THE APPROPRIATE AND GATE NECESSARY IN COUNT DETECT CIRCUITS TO INDICATE A REQUIRED COUNT 5 3 50
M 757 M1-01 DO YOU WORK WITH SAWTOOTH WAVE GENERATORS 8 7 50
M 758 M1-02 DO YOU WORK WITH TRAPEZOIDAL WAVE GENERATORS 3 3 50
M 759 M1-03 DO YOU WORK WITH PULSED OSCILLATORS WITH REGENERATIVE FEEDBACK 7 6 90
M 760 M1-04 DO YOU WORK WITH PULSED OSCILLATORS WITHOUT REGENERATIVE FEEDBACK 7 6 50

COUNTERS

TRIMMING CIRCUITS

PCT MRS RESPONDING 'YES' BY SELECTED GRPS

GPSUM PAGE 28

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

BY-TSK		SPC	SPC	SPC
		001	002	003
M 761	M1-05 DO YOU WORK WITH BLOCKING OSCILLATORS	3	3	0
M 762	M1-06 DO YOU USE OR REFER TO RISE TIME	3	3	50
M 763	M1-07 DO YOU USE OR REFER TO FALL OR FLYBACK TIME	4	3	50
M 764	M1-08 DO YOU USE OR REFER TO SWEEP TIME	7	6	50
M 765	M1-09 DO YOU USE OR REFER TO ELECTRICAL LENGTH OF SAWTOOTH WAVEFORMS	7	6	50
M 766	M1-10 DO YOU USE OR REFER TO PHYSICAL LENGTH OF SAWTOOTH WAVEFORMS	7	7	50
M 767	M1-11 DO YOU USE OR REFER TO LINEAR SLOPE OF SAWTOOTH WAVEFORMS	7	6	50
M 768	M1-12 DO YOU USE OR REFER TO GATE LENGTH OF SAWTOOTH WAVEFORMS	6	5	50
M 769	M2-01 DO YOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB	12	11	50
M 770	M2-02 DO YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL GENERATORS	11	9	50
M 771	M2-03 DO YOU PERFORM PERIODIC MAINTENANCE SUCH AS ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL GENERATORS	10	9	50
M 772	M2-04 DO YOU TROUBLESHOOT TO AN ASSEMBLY OR SUBASSEMBLY WHILE USING SIGNAL GENERATORS	10	9	50
M 773	M2-05 DO YOU TROUBLESHOOT TO THE SMALLEST REPLACEABLE COMPONENT WHILE USING SIGNAL GENERATORS	10	9	50
M 774	M2-06 DO YOU USE AUDIO SINE-WAVE GENERATORS	8	7	50
M 775	M2-07 DO YOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH AS SQUARE WAVE, TRIANGLE, PULSE, OR SPIKE	7	5	50
M 776	M2-08 DO YOU USE RF GENERATORS LESS THAN 1,000 MH	2	1	50
M 777	M2-09 DO YOU USE RF GENERATORS GREATER THAN 1,000 MH	0	0	0
M 778	M2-10 DO YOU USE OTHER SPECIAL PURPOSE OR MULTI-FUNCTION GENERATORS	7	6	50
M 779	M3-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS OR GENERATORS	45	44	0
M 780	M3-02 DO YOU INSPECT MOTORS	44	43	0
M 781	M3-03 DO YOU CLEAN OR LUBRICATE MOTORS	44	43	0
M 782	M3-04 DO YOU OPERATE MOTORS	41	41	0
M 783	M3-05 DO YOU REMOVE OR REPLACE COMPLETE MOTORS	41	41	0
M 784	M3-06 DO YOU REMOVE OR REPLACE MOTOR PARTS	33	34	0
M 785	M3-07 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF MOTORS	45	44	0
M 786	M3-08 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS	30	32	0
M 787	M3-09 DO YOU PERFORM ANY TASKS ON FIELD COILS	14	15	0
M 788	M3-10 DO YOU PERFORM ANY TASKS ON ARMATURES	26	27	0
M 789	M3-11 DO YOU PERFORM ANY TASKS ON ROTORS	24	25	0
M 790	M3-12 DO YOU PERFORM ANY TASKS ON BRUSHES	37	38	0
M 791	M3-13 DO YOU PERFORM ANY TASKS ON SLIP RINGS	28	30	0
M 792	M3-14 DO YOU PERFORM ANY TASKS ON COMMUTATORS	33	34	0
M 793	M3-15 DO YOU PERFORM ANY TASKS ON POLE PIECES	17	18	0

USE OF SIGNAL GENERATORS

MOTORS AND GENERATORS

PCT MBRS RESPONDING 'YES' BY SELECTED GMPs

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		SPC SPC SPC	
		001 002 003	
D1-T5K			
M 794 M3-16 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OF THE FORCE OR TORQUE CREATED BY A MOTOR		4	3 0
M 795 M3-17 DO YOU DETERMINE OR MEASURE THE DIRECTION OF THE MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR		10	9 0
M 796 M3-18 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OR DIRECTION OF THE INDUCED VOLTAGE IN MOTORS		8	9 0
M 797 M3-19 DO YOU WORK WITH SYNCHRONOUS MOTORS		32	32 0
M 798 M3-20 DO YOU WORK WITH INDUCTION MOTORS		33	33 0
M 799 M3-21 DO YOU WORK WITH SPLIT-PHASE MOTORS		24	25 0
M 800 M3-22 DO YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS		32	31 0
M 801 M3-23 DO YOU INSPECT GENERATORS		39	39 0
M 802 M3-24 DO YOU CLEAN OR LUBRICATE GENERATORS		38	38 0
M 803 M3-25 DO YOU OPERATE GENERATORS		40	40 0
M 804 M3-26 DO YOU REMOVE OR REPLACE COMPLETE GENERATORS		40	40 0
M 805 M3-27 DO YOU REMOVE OR REPLACE GENERATOR PARTS		33	34 0
M 806 M3-28 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF GENERATORS		40	40 0
M 807 M3-29 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF GENERATORS		27	27 0
METER MOVEMENTS			
N 808 M1-01 DO YOU WORK WITH METERS IN YOUR PRESENT JOB		40	39 0
N 809 M1-02 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF PERMANENT MAGNETS		9	9 0
N 810 M1-03 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF MOVING COILS		10	9 50
N 811 M1-04 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF SPIRAL SPRINGS		10	9 50
N 812 M1-05 DO YOU READ METER SCALES		43	42 50
N 813 M1-06 DO YOU EXTEND THE RANGE OF AMMETERS		15	15 0
N 814 M1-07 DO YOU ZERO OHMMETERS		41	41 0
N 815 M1-08 DO YOU ZERO AMMETERS		20	21 0
N 816 M1-09 DO YOU EXTEND THE RANGE OF VOLTMETERS		24	26 0
N 817 M1-10 DO YOU USE OR REFER TO VOLTMETER SENSITIVITY (EXPRESSED IN UNITS OF OHMS PER VOLT)		27	26 0
SATURABLE REACTORS AND MAGNETIC AMPLIFIERS			
N 818 M2-01 DO YOU WORK WITH SATURABLE REACTORS OR MAGNETIC AMPLIFIERS IN YOUR PRESENT JOB		28	29 0
N 819 M2-02 DO YOU INSPECT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS		26	27 0
N 820 M2-03 DO YOU CLEAN MAGNETIC AMPLIFIERS OR SATURABLE REACTORS		19	20 0
N 821 M2-04 DO YOU ADJUST MAGNETIC AMPLIFIERS OR SATURABLE REACTORS		23	24 0
N 822 M2-05 DO YOU TROUBLESHOOT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS		25	26 0
N 823 M2-06 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIERS OR SATURABLE REACTORS		26	27 0
N 824 M2-07 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIER OR SATURABLE REACTOR COMPONENTS		19	20 0

PCT MBMS RESPONDING YES BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

01-TSK

SPC SPC SPC
001 002 003

N 825 N2-08 00 YOU USE OR REFER TO HYSTERESIS CURVES OR LOOPS 2 2 0
N 826 N2-09 00 YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT 4 4 0
WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF
SINGLE WINDING SATURABLE REACTORS 7 7 0
N 827 N2-10 00 YOU MEASURE OUTPUT WAVEFORMS ACROSS REACTOR
WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE
REACTORS 7 8 0
N 828 N2-11 00 YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT
WAVEFORMS FOR MAGNETIC AMPLIFIERS 2 2 0
N 829 N2-12 00 YOU USE OR REFER TO COERCIVE FORCE IN SATURABLE
REACTORS 2 2 0
N 830 N2-13 00 YOU USE OR REFER TO RESIDUAL MAGNETISM IN
SATURABLE REACTORS 3 3 0
N 831 N2-14 00 YOU USE OR REFER TO FLUX DENSITY IN SATURABLE
REACTORS 5 5 0
N 832 N2-15 00 YOU USE OR REFER TO POINT OF SATURATION IN
SATURABLE REACTORS 14 15 0
N 833 N2-16 00 YOU USE OR REFER TO SATURABLE REACTOR SCHEMATIC
SYMBOLS 12 11 50
N 834 N3-01 00 YOU WORK WITH WAVESHAPING CIRCUITS IN YOUR PRESENT
JOB 3 2 50
N 835 N3-02 00 YOU USE OR REFER TO TRANSIENT INTERVALS 5 3 50
N 836 N3-03 00 YOU USE OR REFER TO PULSE WIDTH (PW) 5 3 50
N 837 N3-04 00 YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT) 6 4 50
N 838 N3-05 00 YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY
(PRF) 7 6 50
N 839 N3-06 00 YOU USE OR REFER TO DIFFERENTIATING CIRCUITS 11 9 50
N 840 N3-07 00 YOU USE OR REFER TO INTEGRATING CIRCUITS 7 7 50
N 841 N3-08 00 YOU USE OR REFER TO THE CLASSIFICATION OF TIME
CONSTANTS (TC) AS LONG, MEDIUM, OR SHORT 3 3 50
N 842 N3-09 00 YOU DETERMINE WHETHER AN LR OR RC CIRCUIT IS
DIFFERENTIATING OR INTEGRATING BASED ON THE TIME CONSTANT
AND OUTPUT CONFIGURATION 7 6 50
N 843 N3-10 00 YOU WORK WITH SQUARE WAVE GENERATORS 4 3 50
N 844 N3-11 00 YOU WORK WITH RECTANGULAR WAVE GENERATORS 1 1 0
PRESENT JOB 0 0 0
N 846 01-02 00 YOU INSPECT SSB TRANSMIT OR RECEIVE SYSTEMS 0 0 0
N 847 01-03 00 YOU CLEAN SSB TRANSMIT OR RECEIVE SYSTEMS 0 0 0
N 848 01-04 00 YOU ALIGN SSB TRANSMIT OR RECEIVE SYSTEMS 0 0 0
N 849 01-05 00 YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE
SYSTEMS 0 0 0
N 850 01-06 00 YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE
COMPONENTS 0 0 0
N 851 01-07 00 YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE
SYSTEMS 0 0 0
N 852 01-08 00 YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE
COMPONENTS 0 0 0

WAVESHAPING
CIRCUITS

SINGLE SIDEBAND
SYSTEMS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC 001	SPC 002	SPC 003
0 853 01-09 00 YOU PERFORM TASKS ON SSB AUDIO AMPLIFIERS	1	1	0
0 854 01-10 00 YOU PERFORM TASKS ON SSB BALANCED MODULATORS	0	0	0
0 855 01-11 00 YOU PERFORM TASKS ON SSB CARRIER OSCILLATORS	0	0	0
0 856 01-12 00 YOU PERFORM TASKS ON SSB LC FILTERS	1	1	0
0 857 01-13 00 YOU PERFORM TASKS ON SSB CRYSTAL FILTERS	0	0	0
0 858 01-14 00 YOU PERFORM TASKS ON SSB MECHANICAL FILTERS	0	0	0
0 859 01-15 00 YOU PERFORM TASKS ON SSB OSCILLATORS	1	1	0
0 860 01-16 00 YOU PERFORM TASKS ON SSB MIXERS	0	0	0
0 861 01-17 00 YOU PERFORM TASKS ON SSB DRIVERS	1	1	0
0 862 01-18 00 YOU PERFORM TASKS ON SSB POWER AMPLIFIERS	1	1	0
0 863 01-19 00 YOU PERFORM TASKS ON SSB RF AMPLIFIERS	0	0	0
0 864 01-20 00 YOU PERFORM TASKS ON SSB FREQUENCY CONVERTERS	0	0	0
0 865 01-21 00 YOU PERFORM TASKS ON SSB IF AMPLIFIERS	0	0	0
0 866 01-22 00 YOU PERFORM TASKS ON SSB DEMODULATORS	1	1	0
0 867 01-23 00 YOU PERFORM TASKS ON SSB DON'T REMEMBER WHICH SSB	0	0	0
SYSTEM STAGES			
0 868 01-24 00 YOU USE OR REFER TO SELECTIVE FADING	0	0	0
0 869 01-25 00 YOU USE OR REFER TO PEAK POWER	0	0	0
0 870 01-26 00 YOU USE OR REFER TO FREQUENCY STABILITY	0	0	0
0 871 01-27 00 YOU USE OR REFER TO RESPONSE CURVES FOR	0	0	0
BANDWIDTH FILTERS			
0 872 01-28 00 YOU CALCULATE PEAK POWER OR EFFECTIVE POWER OF SSB	0	0	0
TRANSMITTERS			
0 873 01-29 00 YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB	0	0	0
TRANSMITTER SCHEMATIC DIAGRAMS			
0 874 01-30 00 YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB	0	0	0
RECEIVER SCHEMATIC DIAGRAMS			
0 875 02-01 00 YOU WORK ON PULSE MODULATION SYSTEMS IN YOUR	1	0	50
PRESENT JOB			
0 876 02-02 00 YOU INSPECT PULSE MODULATION SYSTEMS	1	0	50
0 877 02-03 00 YOU CLEAN PULSE MODULATION SYSTEMS	1	0	50
0 878 02-04 00 YOU ALIGN PULSE MODULATION SYSTEMS	1	0	50
0 879 02-05 00 YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS	1	0	50
0 880 02-06 00 YOU TROUBLESHOOT TO PULSE MODULATION SYSTEM	1	0	50
COMPONENTS			
0 881 02-07 00 YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS	1	0	50
0 882 02-08 00 YOU REMOVE OR REPLACE PULSE MODULATION SYSTEM	1	0	50
COMPONENTS			
0 883 02-09 00 YOU WORK ON PULSE-AMPLITUDE MODULATION (PAM)	1	0	50
SYSTEMS			
0 884 02-10 00 YOU WORK ON PULSE-DURATION MODULATION (PDM)	1	0	50
SYSTEMS			
0 885 02-11 00 YOU WORK ON PULSE-POSITION MODULATION (PPM)	1	0	50
SYSTEMS			
0 886 02-12 00 YOU WORK ON PULSE-CODE MODULATION (PCM) SYSTEMS	0	0	0
0 887 02-13 00 YOU WORK ON LINE PULSING MODULATION SYSTEMS	1	0	50
0 888 02-14 00 YOU WORK ON DON'T REMEMBER WHICH TYPE OF	0	0	0
MODULATION SYSTEM			

PULSE MODULATION
SYSTEMS

PCT HRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMINGSPC SPC SPC
001 002 003

DY-TSK

0 889 02-15 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM
POWER SUPPLIES 1 0 50

0 890 02-16 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM
CHARGING CHOKES AND CHARGING DIODES 1 0 50

0 891 02-17 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM
PULSE FORMING NETWORKS 1 0 50

0 892 02-18 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM
TIMERS 1 0 50

0 893 02-19 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM
SWITCHES SUCH AS GAS THYRATRONS 0 0 0

0 894 02-20 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM
PULSE TRANSFORMERS 1 0 50

0 895 02-21 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM
TRANSMITTER TUBES 0 0 0

0 896 02-22 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM RF
AMPLIFIERS 0 0 0

0 897 02-23 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM
FREQUENCY CONVERTERS 1 0 50

0 898 02-24 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM
IF AMPLIFIERS 0 0 0

0 899 02-25 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM
DETECTORS 0 0 0

0 900 02-26 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM
VIDEO AMPLIFIERS 0 0 0

0 901 02-27 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM
POWER VIDEO AMPLIFIERS 0 0 0

0 902 02-28 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM
DON'T REMEMBER WHICH PULSE MODULATION SYSTEM STAGES 0 0 0

0 903 02-29 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY
(PRF) 1 0 50

0 904 02-30 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT) 1 0 50

0 905 02-31 DO YOU USE OR REFER TO PULSE WIDTH (PW) 1 0 50

0 906 02-32 DO YOU USE OR REFER TO PULSE SHAPE 1 0 50

0 907 02-33 DO YOU USE OR REFER TO PEAK POWER 1 0 50

0 908 02-34 DO YOU USE OR REFER TO AVERAGE POWER 1 0 50

0 909 02-35 DO YOU CALCULATE PULSE RECURRENCE TIME (PRT) OR PULSE
RECURRENCE FREQUENCY (PRF) 1 0 50

0 910 02-36 DO YOU MEASURE PULSE RECURRENCE TIME (PRT) OR PULSE
RECURRENCE FREQUENCY (PRF) 1 0 50

0 911 02-37 DO YOU USE FORMULAS TO CALCULATE AVERAGE POWER OR
PEAK POWER OF PULSE MODULATION TRANSMIT SYSTEMS 1 0 50

0 912 02-38 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE
MODULATION TRANSMITTER SCHEMATIC DIAGRAMS 1 0 50

0 913 02-39 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE
MODULATION RECEIVER SCHEMATIC DIAGRAMS 1 0 50

0 914 03-01 DO YOU WORK WITH ANTENNAS IN YOUR PRESENT JOB 0 0 0

0 915 03-02 DO YOU INSPECT ANTENNAS 0 0 0

ANTENNAS

PCT MBS RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

0Y-TSK		SPC 001	SPC 002	SPC 003
0 914	03-03 DO YOU CLEAN ANTENNAS	0	0	0
0 917	03-04 DO YOU PHYSICALLY ALIGN ANTENNAS	0	0	0
0 918	03-05 DO YOU ELECTRICALLY ALIGN ANTENNAS	0	0	0
0 919	03-06 DO YOU TROUBLESHOOT TO ANTENNAS	0	0	0
0 920	03-07 DO YOU TROUBLESHOOT TO ANTENNA COMPONENTS	0	0	0
0 921	03-08 DO YOU REMOVE OR INSTALL ANTENNAS	0	0	0
0 922	03-09 DO YOU REMOVE OR REPLACE COMPONENTS OF ANTENNAS	0	0	0
0 923	03-10 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF E OR ELECTRIC FIELD LINES	0	0	0
0 924	03-11 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF H OR MAGNETIC FIELD LINES	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
0 926	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
0 927	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
0 928	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
0 929	03-16 DO YOU WORK WITH HERTZ ANTENNAS	0	0	0
0 930	03-17 DO YOU WORK WITH MARCONI ANTENNAS	0	0	0
0 931	03-18 DO YOU WORK WITH BROADSIDE ARRAYS	0	0	0
0 932	03-19 DO YOU WORK WITH END-FIRE ARRAYS	0	0	0
0 933	03-20 DO YOU WORK WITH COLLINOID ARRAYS	0	0	0
0 934	03-21 DO YOU WORK WITH COLLINEAR ARRAYS	0	0	0
0 935	03-22 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC INDUCTION FIELDS WHEN WORKING WITH ANTENNAS	0	0	0
0 936	03-23 DO YOU MEASURE ELECTROMAGNETIC INDUCTION FIELDS OF ANTENNAS	0	0	0
0 937	03-24 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC RADIATION FIELDS WHEN WORKING WITH ANTENNAS	0	0	0
0 938	03-25 DO YOU MEASURE ELECTROMAGNETIC RADIATION FIELDS OF ANTENNAS	0	0	0
0 939	03-26 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA RADIATION	0	0	0
0 940	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
0 941	03-28 ARE ANY OF THE ANTENNAS YOU WORK ON LINEARLY POLARIZED	0	0	0
0 942	03-29 ARE ANY OF THE ANTENNAS YOU WORK ON CIRCULARLY POLARIZED	0	0	0
0 943	03-30 DO YOU MEASURE OR DETERMINE THE POLARITY OF ANTENNAS YOU WORK ON	0	0	0
0 944	03-31 DO YOU CONSTRUCT, OR MAKE THE CALCULATIONS NECESSARY TO CONSTRUCT, ANTENNAS OF CORRECT LENGTH FOR SPECIFIC WAVELENGTHS	0	0	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DT-TSK

	SPL 001	SPC 002	SPC 003
Q 945 Q3-32 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS	0	0	0
Q 946 Q3-33 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS DIRECTORS	0	0	0
Q 947 Q3-34 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS REFLECTORS	0	0	0
Q 948 Q3-35 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN DON'T REMEMBER WHAT KIND OF ELEMENTS	0	0	0
Q 949 Q3-36 DO YOU WORK ON UNIDIRECTIONAL ANTENNAS	0	0	0
Q 950 Q3-37 DO YOU WORK ON BIDIRECTIONAL ANTENNAS	0	0	0
Q 951 Q3-38 DO YOU WORK ON DON'T REMEMBER THE DIRECTIONALITY	0	0	0
Q 952 Q3-39 DO YOU WORK WITH ROTAR ANTENNA ARRAYS	0	0	0
P 953 P1-01 IN YOUR PRESENT JOB DO YOU WORK WITH TRANSMISSION LINES (TRANSMISSION LINES ARE DEFINED TO INCLUDE LEADS BETWEEN RECEIVERS AND ANTENNAS, TELEPHONE LEADS, AS WELL AS HIGH VOLTAGE POWER LINES, ETC. DO NOT CONSIDER MAVEGUIDES AS TRANSMISSION LINES)	0	0	0
P 954 P1-02 DO YOU REFER TO OR USE COPPER LOSS OR I2R LOSS IN TRANSMISSION LINES	0	0	0
P 955 P1-03 DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY CURRENTS IN TRANSMISSION LINES	0	0	0
P 956 P1-04 DO YOU REFER TO OR USE RADIATION LOSS IN TRANSMISSION LINES	0	0	0
P 957 P1-05 DO YOU USE OR REFER TO DIELECTRIC LOSS IN TRANSMISSION LINES	0	0	0
P 958 P1-06 DO YOU USE OR REFER TO LEAKAGE LOSSES IN TRANSMISSION LINES	0	0	0
P 959 P1-07 DO YOU WORK WITH TWISTED PAIR TRANSMISSION LINES	0	0	0
P 960 P1-08 DO YOU WORK WITH TWIN LEAD TRANSMISSION LINES	0	0	0
P 961 P1-09 DO YOU WORK WITH OPEN TWO-WIRE TRANSMISSION LINES	0	0	0
P 962 P1-10 DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION LINES	0	0	0
P 963 P1-11 DO YOU WORK WITH RIGID COAXIAL CABLE TRANSMISSION LINES	0	0	0
P 964 P1-12 DO YOU TROUBLESHOOT TRANSMISSION LINES	0	0	0
P 965 P1-13 DO YOU ANALYZE VOLTAGE OR CURRENT WAVEFORMS IN TRANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION (OPEN, SHORTED, CAPACITIVE, INDUCTIVE)	0	0	0
P 966 P1-14 DO YOU SELECT APPROPRIATE TRANSMISSION LINES TERMINATIONS TO ACHIEVE DESIRED WAVEFORMS	0	0	0
P 967 P1-15 DO YOU USE OR REFER TO SCHEMATIC SYMBOLS FOR LINE TERMINATIONS IN TERMS OF CIRCUIT TERMINATIONS	0	0	0
P 968 P1-16 DO YOU MEASURE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES	0	0	0
P 969 P1-17 DO YOU CALCULATE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES	0	0	0
P 970 P1-18 DO YOU PERFORM THE CALCULATIONS NECESSARY TO DETERMINE THE IMPEDANCE AND LENGTH OF QUARTER - WAVELENGTH MATCHING TRANSFORMERS TO MATCH TRANSMISSION LINES TO LOADS	0	0	0

TRANSMISSION
LINES

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC 001	SPC 002	SPC 003
01-TSK			
P 971 P1-19 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING MATCHING TRANSFORMERS	0	0	0
P 972 P1-20 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING DELTA MATCHING	0	0	0
P 973 P1-21 DO YOU SELECT THE TYPE OF TRANSMISSION LINE NEEDED FOR PARTICULAR JOBS WITHOUT REFERRING TO TECHNICAL DATA	0	0	0
P 974 P1-22 DO YOU USE OR REFER TO THE TERM CHARACTERISTIC IMPEDANCE (Z0) OF TRANSMISSION LINES	0	0	0
P 975 P1-23 DO YOU CALCULATE THE CHARACTERISTIC IMPEDANCE (Z0) OF TRANSMISSION LINES	0	0	0
P 976 P1-24 DO YOU USE OR REFER TO THE TERM CUTOFF FREQUENCY OF TRANSMISSION LINES	0	0	0
P 977 P1-25 DO YOU USE OR REFER TO THE TERM VELOCITY FACTOR (K) OF TRANSMISSION LINES	0	0	0
P 978 P1-26 DO YOU COMPUTE THE ELECTRICAL LENGTH OF TRANSMISSION LINES FOR PARTICULAR FREQUENCIES	0	0	0
P 979 P1-27 DO YOU CONSTRUCT TRANSMISSION LINES OF PARTICULAR ELECTRICAL LENGTH FOR GIVEN FREQUENCIES	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
P 981 P1-29 DO YOU WORK WITH NONRESONANT (FLAT) TRANSMISSION LINES	0	0	0
P 982 P1-30 DO YOU WORK WITH RESONANT TRANSMISSION LINES	0	0	0
P 983 P1-31 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING STUB MATCHING	0	0	0
P 984 P2-01 DO YOU WORK WITH WAVEGUIDES OR CAVITY RESONATORS IN YOUR PRESENT JOB	0	0	0
P 985 P2-02 DO YOU INSPECT WAVEGUIDES OR CAVITY RESONATORS	0	0	0
P 986 P2-03 DO YOU CLEAN WAVEGUIDES OR CAVITY RESONATORS	0	0	0
P 987 P2-04 DO YOU BEND WAVEGUIDES OR CAVITY RESONATORS	0	0	0
P 988 P2-05 DO YOU TWIST WAVEGUIDES OR CAVITY RESONATORS	0	0	0
P 989 P2-06 DO YOU PRESSURIZE WAVEGUIDES OR CAVITY RESONATORS	0	0	0
P 990 P2-07 DO YOU PURGE WAVEGUIDES OR CAVITY RESONATORS	0	0	0
P 991 P2-08 DO YOU TROUBLESHOOT WAVEGUIDES OR CAVITY RESONATORS	0	0	0
P 992 P2-09 DO YOU REMOVE OR INSTALL COMPLETE WAVEGUIDES	0	0	0
P 993 P2-10 DO YOU REMOVE OR INSTALL WAVEGUIDE SECTIONS	0	0	0
P 994 P2-11 DO YOU REMOVE OR INSTALL DUMMY LOADS	0	0	0
P 995 P2-12 DO YOU REMOVE OR INSTALL E BENDS	0	0	0
P 996 P2-13 DO YOU REMOVE OR INSTALL H BENDS	0	0	0
P 997 P2-14 DO YOU REMOVE OR INSTALL OTHER BENDS	0	0	0
P 998 P2-15 DO YOU REMOVE OR INSTALL CHOKE JOINTS	0	0	0
P 999 P2-16 DO YOU REMOVE OR INSTALL ROTATING JOINTS	0	0	0
P1000 P2-17 DO YOU REMOVE OR INSTALL DIRECTIONAL COUPLERS	0	0	0
P1001 P2-18 DO YOU REMOVE OR INSTALL BIDIRECTIONAL COUPLERS	0	0	0
P1002 P2-19 DO YOU USE OR REFER TO "A" WALL OF WAVEGUIDES	0	0	0

WAVEGUIDES AND
CAVITY RESONATORS

PCT MURS RESPONDING 'YES' BY SELECTED GPRS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UY-TSK

	SPC 001	SPC 002	SPC 003
P1003 P2-20 DO YOU USE OR REFER TO "B" WALL OF WAVEGUIDES	U	U	U
P1004 P2-21 DO YOU USE OR REFER TO CUTOFF FREQUENCY OF WAVEGUIDES	U	U	U
P1005 P2-22 DO YOU USE OR REFER TO FREQUENCY-DETERMINING WALL OF WAVEGUIDES	U	U	U
P1006 P2-23 DO YOU USE OR REFER TO POWER-DETERMINING WALL OF WAVEGUIDES	U	U	U
P1007 P2-24 DO YOU USE OR REFER TO ELECTRIC FIELD BOUNDARY CONDITIONS	U	U	U
P1008 P2-25 DO YOU USE OR REFER TO MAGNETIC FIELD BOUNDARY CONDITIONS	U	U	U
P1009 P2-26 DO YOU USE OR REFER TO DUPLEXER FIELD BOUNDARY CONDITIONS	U	U	U
P1010 P2-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST WAVEGUIDES ARE MADE WITH A "B" WALL SIZE OF .7 WAVELENGTHS OF THE OPERATING FREQUENCY	U	U	U
P1011 P2-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST "A" WALLS RANGE FROM .2 TO .5 WAVELENGTHS IN SIZE, WITH .35 USED AS AN AVERAGE	U	U	U
P1012 P2-29 ARE YOU CONCERNED WITH THE MATERIAL (SUCH AS BRASS) WHICH WAVEGUIDES ARE MADE OF	U	U	U
P1013 P2-30 DO YOU COMPUTE THE LENGTH OF A WAVEGUIDE FOR SPECIFIC INSTALLATION	U	U	U
P1014 P2-31 DO YOU USE THE RIGHT HAND RULE TO DETERMINE THE DIRECTION OF PROPAGATION, DIRECTION OF "E" FIELD, OR DIRECTION OF "H" FIELD IN WAVEGUIDES	U	U	U
P1015 P2-32 DO YOU USE OR REFER TO THE TIME PHASE OF PEAK "E" OR "H" LINES IN WAVEGUIDES	U	U	U
P1016 P2-33 DO YOU MEASURE THE TIME PHASE OF "E" OR "H" LINES IN WAVEGUIDES	U	U	U
P1017 P2-34 DO YOU USE OR REFER TO THE SPACE QUADRATURE OF "E" OR "H" LINES IN WAVEGUIDES	U	U	U
P1018 P2-35 ARE HIGH POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	U	U	U
P1019 P2-36 ARE LOW POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	U	U	U
P1020 P2-37 ARE LOOPS USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	U	U	U
P1021 P2-38 ARE APERTURES (WINDOWS OR IRISES) USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	U	U	U
P1022 P2-39 ARE DON'T REMEMBER THE KIND OF ENERGY COUPLING USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	U	U	U
P1023 P2-40 DO YOU DETERMINE WHERE PROBES SHOULD BE MOUNTED IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA	U	U	U
P1024 P2-41 DO YOU DETERMINE THE POSITIONING OF LOOPS IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA	U	U	U

PCT MBRs RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DT-TSK

SPC SPC SPC
001 002 003

P1025 P2-42 DO YOU DETERMINE THE POSITIONING OR SIZE OF APERTURES
IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO
TECHNICAL DATA 0 0 0

P1026 P2-43 ARE CHORE JOINTS USED IN WAVEGUIDES OR CAVITY
RESONATORS YOU WORK WITH 0 0 0

P1027 P2-44 ARE ROTATING JOINTS USED IN WAVEGUIDES OR CAVITY
RESONATORS YOU WORK WITH 0 0 0

P1028 P2-45 ARE DON'T REMEMBER THE KIND OF JOINTS USED IN
WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH 0 0 0

P1029 P2-46 DO YOU TUNE CAVITY RESONATORS USING CAPACITIVE TUNING 0 0 0

P1030 P2-47 DO YOU TUNE CAVITY RESONATORS USING INDUCTIVE TUNING 0 0 0

P1031 P2-48 DO YOU TUNE CAVITY RESONATORS USING VOLUME TUNING 0 0 0

P1032 P2-49 DO YOU TUNE CAVITY RESONATORS USING DON'T REMEMBER
THE METHOD OF TUNING 0 0 0

P1033 P2-50 DO YOU MEASURE THE FREQUENCY OF SIGNALS IN CAVITY
RESONATORS 0 0 0

P1034 P3-01 IN YOUR PRESENT JOB DO YOU WORK WITH KLYSTRONS,
TRAVELING WAVE TUBES (TWT), PARAMETRIC AMPLIFIERS, OR
MAGNETRONS 0 0 0

P1035 P3-02 DO YOU USE OR REFER TO INTERELECTRODE CAPACITANCE 0 0 0

P1036 P3-03 DO YOU USE OR REFER TO ELECTRON TRANSIT TIME 0 0 0

P1037 P3-04 DO YOU USE OR REFER TO LEAD INDUCTANCE 0 0 0

P1038 P3-05 DO YOU USE OR REFER TO RF LOSSES IN EXTERNAL
CIRCUITRY 0 0 0

P1039 P3-06 DO YOU USE OR REFER TO PRINCIPLE OF ELECTRON VELOCITY
MODULATION 0 0 0

P1040 P3-07 DO YOU USE OR REFER TO ELECTRON BUNCHING 0 0 0

P1041 P3-08 DO YOU WORK WITH TWO-CAVITY KLYSTRONS 0 0 0

P1042 P3-09 DO YOU WORK WITH THREE-CAVITY KLYSTRONS 0 0 0

P1043 P3-10 DO YOU WORK WITH REFLEX KLYSTRONS 0 0 0

P1044 P3-11 DO YOU WORK WITH TRAVELING-WAVE TUBES (TWT) 0 0 0

P1045 P3-12 DO YOU WORK WITH NONDEGENERATIVE PARAMETRIC
AMPLIFIERS 0 0 0

P1046 P3-13 DO YOU WORK WITH UP-CONVERTER PARAMETRIC AMPLIFIERS 0 0 0

P1047 P3-14 DO YOU WORK WITH MAGNETRONS 0 0 0

P1048 P3-15 DO YOU INSPECT KLYSTRONS OR TWT 0 0 0

P1049 P3-16 DO YOU CLEAN KLYSTRONS OR TWT 0 0 0

P1050 P3-17 DO YOU TUNE KLYSTRONS OR TWT ELECTRICALLY 0 0 0

P1051 P3-18 DO YOU TUNE KLYSTRONS OR TWT MECHANICALLY 0 0 0

P1052 P3-19 DO YOU PERFORM OPERATIONAL CHECKS OF KLYSTRONS OR
TWT 0 0 0

P1053 P3-20 DO YOU TROUBLESHOOT KLYSTRONS OR TWT 0 0 0

P1054 P3-21 DO YOU REMOVE OR REPLACE COMPLETE KLYSTRON OR TWT 0 0 0

P1055 P3-22 DO YOU REMOVE OR REPLACE KLYSTRON OR TWT COMPONENTS 0 0 0

P1056 P3-23 DO YOU INSPECT PARAMETRIC AMPLIFIERS 0 0 0

P1057 P3-24 DO YOU CLEAN PARAMETRIC AMPLIFIERS 0 0 0

P1058 P3-25 DO YOU ADJUST PARAMETRIC AMPLIFIERS 0 0 0

MICROWAVE
AMPLIFIERS AND
OSCILLATORS

PCT MBS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK		SPC		SPC		SPC	
				001		002		003	
P1059	P3-26 DO YOU TUNE PARAMETRIC AMPLIFIERS	0	0	0	0	0	0	0	0
P1060	P3-27 DO YOU PERFORM OPERATIONAL CHECKS OF PARAMETRIC AMPLIFIERS	0	0	0	0	0	0	0	0
P1061	P3-28 DO YOU TROUBLESHOOT PARAMETRIC AMPLIFIERS	0	0	0	0	0	0	0	0
P1062	P3-29 DO YOU REMOVE OR REPLACE COMPLETE PARAMETRIC AMPLIFIER	0	0	0	0	0	0	0	0
P1063	P3-30 DO YOU REMOVE OR REPLACE PARAMETRIC AMPLIFIER COMPONENTS	0	0	0	0	0	0	0	0
P1064	P3-31 DO YOU INSPECT MAGNETRONS	0	0	0	0	0	0	0	0
P1065	P3-32 DO YOU CLEAN MAGNETRONS	0	0	0	0	0	0	0	0
P1066	P3-33 DO YOU ADJUST MAGNETRONS	0	0	0	0	0	0	0	0
P1067	P3-34 DO YOU TUNE MAGNETRONS	0	0	0	0	0	0	0	0
P1068	P3-35 DO YOU PERFORM OPERATIONAL CHECKS OF MAGNETRONS	0	0	0	0	0	0	0	0
P1069	P3-36 DO YOU TROUBLESHOOT MAGNETRONS	0	0	0	0	0	0	0	0
P1070	P3-37 DO YOU REMOVE OR REPLACE COMPLETE MAGNETRON	0	0	0	0	0	0	0	0
P1071	P3-38 DO YOU REMOVE OR REPLACE MAGNETRON COMPONENTS	0	0	0	0	0	0	0	0
P1072	P3-39 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS COLLECTOR PLATES	0	0	0	0	0	0	0	0
P1073	P3-40 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER CAVITIES	0	0	0	0	0	0	0	0
P1074	P3-41 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER GRIDS	0	0	0	0	0	0	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	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	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	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	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	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	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	0
P1082	P3-49 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRIDS	0	0	0	0	0	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	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	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	0
P1086	P3-53 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON FILAMENTS	0	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	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMINGSPC SPC SPC
001 002 003

0Y-TSK

P1088 P3-55 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON OUTPUT LEADS	0	0	0	0
P1089 P3-56 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES FILAMENTS	0	0	0	0
P1090 P3-57 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES CATHODES	0	0	0	0
P1091 P3-58 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MODULATOR GRIDS	0	0	0	0
P1092 P3-59 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ANODES	0	0	0	0
P1093 P3-60 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES HELICES	0	0	0	0
P1094 P3-61 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES COLLECTORS	0	0	0	0
P1095 P3-62 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MAGNETS	0	0	0	0
P1096 P3-63 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ATTENUATORS	0	0	0	0
P1097 P3-64 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE CIRCULATORS	0	0	0	0
P1098 P3-65 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER SIGNAL CAVITIES	0	0	0	0
P1099 P3-66 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER IDLER CAVITIES	0	0	0	0
P1100 P3-67 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER VARACTOR DIODES	0	0	0	0
P1101 P3-68 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE ISOLATORS	0	0	0	0
P1102 P3-69 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER REVERSE-BIAS BATTERIES	0	0	0	0
P1103 P3-70 DO YOU PERFORM TASKS ON ANODES	0	0	0	0
P1104 P3-71 DO YOU PERFORM TASKS ON ANODE COOLING PINS	0	0	0	0
P1105 P3-72 DO YOU PERFORM TASKS ON COUPLING LOOPS	0	0	0	0
P1106 P3-73 DO YOU PERFORM TASKS ON HEATER LEADS	0	0	0	0
P1107 P3-74 DO YOU PERFORM TASKS ON RESONANT CAVITIES	0	0	0	0
P1108 P3-75 DO YOU PERFORM TASKS ON CATHODES	0	0	0	0
P1109 P3-76 DO YOU PERFORM TASKS ON MAGNETS	0	0	0	0
Q1110 Q1-01 DO YOU USE OR REFER TO STORAGE REGISTERS	6	5	5	50
Q1111 Q1-02 DO YOU USE OR REFER TO SHIFT REGISTERS	8	6	5	50
Q1112 Q1-03 DO YOU USE OR REFER TO LOGIC SYMBOLS OF SHIFT REGISTERS	7	5	5	50
Q1113 Q1-04 DO YOU USE OR REFER TO LOGIC SYMBOLS OF STORAGE REGISTERS	5	4	4	50
Q1114 Q1-05 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	4	2	2	50
Q1115 Q1-06 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF REGISTERS	5	3	3	50

REGISTERS

PCT MURS RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

BY-TSK

SPC SPC SPC
001 002 003

01116 01-07 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A
SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES
HAVE PASSED

7 4 50

01117 02-01 DO YOU WORK WITH DIGITAL COUNTERS, REGISTERS, OR
STORAGE DEVICES IN YOUR PRESENT JOB

8 6 50

01118 02-02 DO YOU USE OR REFER TO DELAY LINES

2 1 50

01119 02-03 DO YOU USE OR REFER TO MAGNETIC CORES

2 2 0

01120 02-04 DO YOU USE OR REFER TO MAGNETIC DRUMS

1 1 0

01121 02-05 DO YOU USE OR REFER TO MAGNETIC TAPES

2 2 0

01122 02-06 DO YOU USE OR REFER TO ACCESS TIME OR SPEED ON

2 3 0

MEMORY SYSTEMS

01123 02-07 DO YOU USE OR REFER TO WORD CAPACITY OF MEMORY

2 2 0

SYSTEMS

01124 02-08 DO YOU USE OR REFER TO VOLATILITY OF MEMORY SYSTEMS

2 2 0

01125 02-09 DO YOU USE OR REFER TO LOGIC SYMBOLS OF DELAY LINES

2 1 50

01126 03-01 IN YOUR PRESENT JOB, DO YOU WORK WITH DIGITAL-TO-

10 9 50

ANALOG (D/A) CONVERTERS, ANALOG-TO-DIGITAL (A/D)

CONVERTERS, OR BINARY-TO-DECIMAL READOUT CONVERTERS

01127 03-02 DO YOU COMPUTE OUTPUT VOLTAGES FOR ELECTROMECHANICAL

4 3 50

DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT

VOLTAGES

01128 03-03 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE

3 3 0

COUNT IN ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A)

CONVERTERS IS DETERMINED BY ADDING THE DENOMINATORS OF THE

RESISTORS

01129 03-04 DO YOU COMPUTE ANALOG VOLTAGES FOR GIVEN BINARY

6 4 50

COUNTS IN ELECTRONIC DIGITAL-TO-ANALOG (D/A) CONVERTERS

01130 03-05 DO YOU PERFORM SAMPLE FUNCTION TASKS ON VARIABLE TIME

6 4 50

ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS

01131 03-06 DO YOU PERFORM HOLD FUNCTION TASKS ON VARIABLE TIME

6 4 50

ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS

01132 03-07 DO YOU PERFORM COMPARE FUNCTION TASKS ON VARIABLE

6 4 50

TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS

01131 03-08 DO YOU PERFORM DIGITIZE FUNCTION TASKS ON VARIABLE

3 3 50

TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS

01134 03-09 DO YOU PERFORM DON'T REMEMBER WHICH FUNCTION TASKS

2 2 0

ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER

CIRCUITS

01135 03-10 DO YOU USE OR REFER TO SAMPLE FUNCTION OF A/D

8 7 50

CONVERTERS

01136 03-11 DO YOU USE OR REFER TO HOLD FUNCTION OF A/D

8 7 50

CONVERTERS

01137 03-12 DO YOU USE OR REFER TO COMPARE FUNCTION OF A/D

8 7 50

CONVERTERS

01138 03-13 DO YOU USE OR REFER TO DIGITAL FUNCTION OF A/D

7 6 50

CONVERTERS

01139 03-14 DO YOU PERFORM ANY TASKS ON MECHANICAL ANALOG-TO-

2 2 0

DIGITAL (A/D) CONVERTERS

STORAGE DEVICES

DIGITAL TO
ANALOG CONVERTERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

QY-T5K

	SPC	SPC	SPC
	001	002	003
KI140 RI-01 DO YOU WORK WITH PHANTASTRON CIRCUITRY IN YOUR PRESENT JOB	0	0	0
PHANTASTRONS			
R1141 R2-01 IN YOUR PRESENT JOB DO YOU WORK WITH SCHMITT TRIGGER CIRCUITS	2	2	0
SCHMITT TRIGGERS			
R1142 R2-02 DO YOU TRACE DATA FLOW THROUGH SCHMITT TRIGGER SCHEMATIC DIAGRAMS	2	2	0
R1143 R2-03 DO YOU USE OR REFER TO SCHMITT TRIGGER LOGIC SYMBOLS	2	2	0
R1144 R3-01 IN YOUR PRESENT JOB DO YOU FABRICATE MULTICONDUCTOR CABLES	7	7	0
CABLE FABRICATION			
R1145 R3-02 DO YOU FABRICATE COAXIAL CABLES	6	5	0
R1146 S1-01 IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS ON VISUAL HEADOUT SYSTEMS	18	17	50
VISUAL HEADOUT SYSTEMS			
S1147 S1-02 DO YOU PERFORM ANY TASKS ON NIXIE LIGHTS OR NIXIE LIGHT DECODER SYSTEMS	4	3	0
NIXIE LIGHT DECODER SYSTEMS			
S1148 S1-03 DO YOU ANALYZE NIXIE LIGHT DECODER SYSTEMS USING BOOLEAN ALGEBRA	2	2	0
BOOLEAN ALGEBRA			
S1149 S2-01 DO YOU WORK WITH PHOTO TUBES IN YOUR PRESENT JOB	2	2	0
PHOTO SENSITIVE DEVICES			
S1150 S3-01 IN YOUR PRESENT JOB DO YOU WORK WITH CHOPPER CIRCUITS	28	29	0
CHOPPER CIRCUITS			
S1151 S3-02 DO YOU MEASURE EXCITATION FREQUENCIES	7	8	0
S1152 S3-03 DO YOU MEASURE VOLTAGE-CURRENT PHASE RELATIONSHIPS	6	6	0
S1153 S3-04 DO YOU USE OR REFER TO EXCITATION FREQUENCIES	6	6	0
S1154 S3-05 DO YOU USE OR REFER TO VOLTAGE-CURRENT PHASE RELATIONSHIPS	4	4	0
RELATIONSHIPS			
S1155 S3-06 DO YOU USE SERVOS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	24	26	0
CHOPPER CIRCUIT OPERATION			
S1156 S3-07 DO YOU USE DETECTORS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	9	9	0
CHOPPER CIRCUIT OPERATION			
S1157 S3-08 DO YOU USE ERROR SIGNAL DEVICES IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	12	13	0
CHOPPER CIRCUIT OPERATION			
S1158 S3-09 DO YOU USE COMPARISON CIRCUITS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	14	15	0
CHOPPER CIRCUIT OPERATION			
T1159 T1-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH INFRARED SYSTEMS	0	0	0
INFRARED SYSTEMS			
T1160 T1-02 DO YOU INSPECT INFRARED SYSTEMS	0	0	0
INSPECTION			
T1161 T1-03 DO YOU CLEAN INFRARED SYSTEMS	0	0	0
CLEANING			
T1162 T1-04 DO YOU ADJUST OR CALIBRATE INFRARED SYSTEMS	0	0	0
ADJUSTMENT			
T1163 T1-05 DO YOU OPERATE INFRARED SYSTEMS	0	0	0
OPERATION			
T1164 T1-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF INFRARED SYSTEMS	0	0	0
TROUBLESHOOTING			
T1165 T1-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF INFRARED SYSTEMS	0	0	0
MAJOR ASSEMBLIES			
T1166 T1-08 DO YOU TROUBLESHOOT DOWN TO INFRARED SYSTEM COMPONENT PARTS	0	0	0
COMPONENT PARTS			
T1167 T1-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF INFRARED SYSTEMS	0	0	0
REMOVAL AND REPLACEMENT			
T1168 T1-10 DO YOU REMOVE OR REPLACE INFRARED SYSTEM COMPONENT PARTS	0	0	0
REMOVAL AND REPLACEMENT			

PCT MRS RESPONDING 'YES' BY SELECTED GRPS

GP SUM: PAGE 42

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UY-TSK		SPC	SPC	SPC
		001	002	003
T1169	T1-11 DO YOU USE OR REFER TO FAR REGION	0	0	0
T1170	T1-12 DO YOU USE OR REFER TO INTERMEDIATE REGION	0	0	0
T1171	T1-13 DO YOU USE OR REFER TO NEAR REGION	0	0	0
T1172	T1-14 DO YOU USE OR REFER TO MICRON	0	0	0
T1173	T1-15 DO YOU USE OR REFER TO GRAY BODIES	0	0	0
T1174	T1-16 DO YOU USE OR REFER TO BLACK BODIES	0	0	0
T1175	T1-17 DO YOU USE OR REFER TO ABSORPTION	0	0	0
T1176	T1-18 DO YOU USE OR REFER TO SCATTERING	0	0	0
T1177	T1-19 DO YOU USE OR REFER TO ABSOLUTE ZERO	0	0	0
T1178	T1-20 DO YOU PERFORM TASKS ON BLITZ	0	0	0
T1179	T1-21 DO YOU PERFORM TASKS ON TARGET BUTTONS	0	0	0
T1180	T1-22 DO YOU PERFORM TASKS ON EJECTOR LENSES	0	0	0
T1181	T1-23 DO YOU PERFORM TASKS ON OCULAR LENSES	0	0	0
T1182	T1-24 DO YOU PERFORM TASKS ON CORRECTION LENSES	0	0	0
T1183	T1-25 DO YOU PERFORM TASKS ON FILTERS	0	0	0
T1184	T1-26 DO YOU PERFORM TASKS ON SPHERICAL MIRRORS	0	0	0
T1185	T1-27 DO YOU PERFORM TASKS ON PLANE MIRRORS	0	0	0
T1186	T2-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH LASERS	0	0	0
T1187	T2-02 DO YOU INSPECT LASER SYSTEMS	0	0	0
T1188	T2-03 DO YOU CLEAN LASER SYSTEMS	0	0	0
T1189	T2-04 DO YOU OPERATE LASER SYSTEMS	0	0	0
T1190	T2-05 DO YOU OPERATE LASER SYSTEMS	0	0	0
T1191	T2-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF LASER SYSTEMS	0	0	0
T1192	T2-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF LASER SYSTEMS	0	0	0
T1193	T2-08 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF LASER SYSTEMS	0	0	0
T1194	T2-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF LASER SYSTEMS	0	0	0
T1195	T2-10 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF LASER SYSTEMS	0	0	0
T1196	T2-11 DO YOU USE OR REFER TO ANGSTROMS (A)	0	0	0
T1197	T2-12 DO YOU USE OR REFER TO ELECTRON ENERGY LEVELS	0	0	0
T1198	T2-13 DO YOU USE OR REFER TO GROUND STATE	0	0	0
T1199	T2-14 DO YOU USE OR REFER TO EXCITED STATE	0	0	0
T1200	T2-15 DO YOU USE OR REFER TO PACKET OF RADIATION	0	0	0
T1201	T2-16 DO YOU USE OR REFER TO PHOTONS	0	0	0
T1202	T2-17 DO YOU USE OR REFER TO SPONTANEOUS EMISSION	0	0	0
T1203	T2-18 DO YOU USE OR REFER TO STIMULATED EMISSION	0	0	0
T1204	T2-19 DO YOU USE OR REFER TO COHERENCE OR INCOHERENCE	0	0	0
T1205	T2-20 DO YOU USE OR REFER TO INVERSION LEVEL	0	0	0
T1206	T2-21 DO YOU USE OR REFER TO MONOCHROMATIC	0	0	0
T1207	T2-22 DO YOU WORK WITH ACTIVE MATERIALS	0	0	0
T1208	T2-23 DO YOU WORK WITH PUMPING SOURCES	0	0	0
T1209	T2-24 DO YOU WORK WITH FULL SILVERED (100% REFLECTIVE) MIRRORS	0	0	0

LASERS

PCT MGRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

CY-TSK

SPC SPC SPC
001 002 003

T1210	T2-25	DO YOU WORK WITH HALF SILVERED (92% REFLECTIVE) MIRRORS	0	0	0
T1211	T2-26	DO YOU WORK WITH HELICAL FLASHTUBES	0	0	0
T1212	T2-27	DO YOU WORK WITH RUBY	0	0	0
T1213	T2-28	DO YOU WORK WITH HELIUM-NEON	0	0	0
T1214	T2-29	DO YOU WORK WITH HELIUM-XENON	0	0	0
T1215	T2-30	DO YOU WORK WITH XENON	0	0	0
T1216	T2-31	DO YOU WORK WITH CESIUM-HELIUM	0	0	0
T1217	T2-32	DO YOU WORK WITH ARGON	0	0	0
T1218	T2-33	DO YOU WORK WITH NEODYMIUM IN GLASS	0	0	0
T1219	T2-34	DO YOU WORK WITH GALLIUM ARSENIDE	0	0	0
T1220	T3-01	IN YOUR PRESENT JOB DO YOU WORK WITH DISPLAY TUBES, SUCH AS DIRECT VIEW STORAGE (DVST) OR MULTIPLE MODE STORAGE TUBES (MMST)	0	0	0
T1221	T3-02	DO YOU INSPECT DVST OR MMST	0	0	0
T1222	T3-03	DO YOU CLEAN DVST OR MMST	0	0	0
T1223	T3-04	DO YOU ADJUST OR CALIBRATE DVST OR MMST	0	0	0
T1224	T3-05	DO YOU OPERATE SYSTEMS THAT CONTAIN DVST OR MMST	0	0	0
T1225	T3-06	DO YOU TROUBLESHOOT DVST OR MMST	0	0	0
		CIRCUITS			
T1226	T3-07	DO YOU REMOVE OR REPLACE DVST OR MMST TUBES FROM MAJOR ASSEMBLIES OR UNITS	0	0	0
T1227	T3-08	DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF DVST	0	0	0
T1228	T3-09	DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF MMST	0	0	0
T1229	T3-10	DO YOU PERFORM TASKS ON FLOOD GUNS	0	0	0
T1230	T3-11	DO YOU PERFORM TASKS ON WRITE GUNS	0	0	0
T1231	T3-12	DO YOU PERFORM TASKS ON ATTACK GUNS	0	0	0
T1232	T3-13	DO YOU PERFORM TASKS ON ERASE GUNS	0	0	0
T1233	T3-14	DO YOU PERFORM TASKS ON STORAGE GRIDS	0	0	0
T1234	U1-01	IN YOUR PRESENT JOB, DO YOU PERFORM ANY PROGRAMMING TASKS	11	9	50
U1235	U1-02	DO YOU USE OR REFER TO DECIMAL SYSTEMS	5	3	0
U1236	U1-03	DO YOU USE OR REFER TO PROGRAMS	2	3	0
U1237	U1-04	DO YOU USE OR REFER TO HEXIDECIMAL SYSTEMS	2	1	0
U1238	U1-05	DO YOU USE OR REFER TO 8-4-2-1 SYSTEMS	2	1	50
U1239	U1-06	DO YOU USE OR REFER TO FOUR SYSTEMS	1	1	0
U1240	U1-07	DO YOU USE OR REFER TO BINARY SYSTEMS	8	6	50
U1241	U1-08	DO YOU USE OR REFER TO TIME-SHARING	2	0	50
U1242	U1-09	DO YOU USE OR REFER TO DATA WORDS	0	0	0
U1243	U1-10	DO YOU USE OR REFER TO ADDRESS WORDS	0	0	0
U1244	U1-11	DO YOU USE OR REFER TO ADDRESS/SUBADDRESS	0	0	0
U1245	U1-12	DO YOU USE OR REFER TO STEERING/INFORMATION	1	1	0
U1246	U1-13	DO YOU USE OR REFER TO INFORMATION WORDS	1	1	0
U1247	U1-14	DO YOU PERFORM TASKS ON SINGLE LEVEL PROGRAMMING	7	6	50
U1248	U1-15	DO YOU PERFORM TASKS ON MULTI-LEVEL PROGRAMMING	0	0	0

DISPLAY TUBES

PROGRAMMING

PCT MRS RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

01-TSK

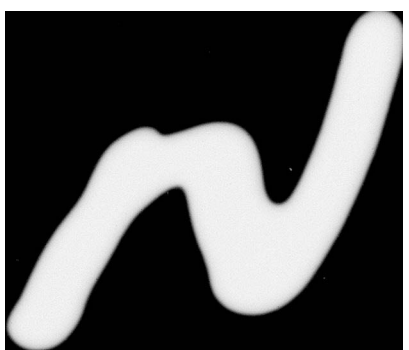
SPC SPC SPC
001 002 003

U1249 U1-16 DO YOU PERFORM TASKS ON INPUT DEVICES
U1250 U1-17 DO YOU PERFORM TASKS ON STORAGE DEVICES
U1251 U1-18 DO YOU PERFORM TASKS ON ARITHMETIC SECTIONS
U1252 U1-19 DO YOU PERFORM TASKS ON CONTROL SECTIONS
U1253 U1-20 DO YOU PERFORM TASKS ON OUTPUT DEVICES
U1254 U1-21 DO YOU PERFORM TASKS ON POWER SUPPLIES
U1255 U2-01 DO YOU USE DECIBELS TO EXPRESS AMPLIFICATION AND
ATTENUATION
U1256 U2-02 DO YOU USE LOGARITHMS TO COMPUTE OUTPUT POWER IN
DECIBELS
U1257 U2-03 DO YOU USE LOGARITHMS TO COMPUTE ATTENUATION IN
DECIBELS
U1258 U2-04 DUMMY TASK TO IDENTIFY INCUMBENTS WHO PERFORMED
NO TASKS

DB AND POWER
RATIOS

8 7 50
4 3 50
2 2 50
5 3 50
7 5 50
7 4 50
2 2 0
0 0 0
0 0 0
18 19 0

ENO



AD-A044 114

AIR FORCE OCCUPATIONAL MEASUREMENT CENTER LACKLAND A--ETC F/G 5/9
INSTRUMENT TRAINER SPECIALIST AFSC 34151.(U)
AUG 77 T J O'CONNOR, M J KELLEY

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SUPPLEMENTARY
INFORMATION



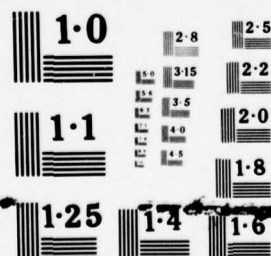
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NATIONAL BUREAU OF STANDARDS
MICROCOPY RESOLUTION TEST CHART

SUPPLEMENTARY

INFORMATION

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned as Instrument Trainer Specialists (AFSC 34151). The report gives a detailed listing of the technical tasks and knowledge needed to perform the jobs within the speciality or career ladder.		

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✓ This specialty has the following functions:

Installs, operates, maintains, and repairs instrument and cockpit procedure trainers; and instructs student and rated pilots in instrument flying and navigational procedures. Performs maintenance on instrument and cockpit procedure trainers. Installs and repairs instrument and cockpit procedure components. Operates and instructs on instrument and cockpit procedure trainer and related equipment. Supervises instrument trainer personnel.

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