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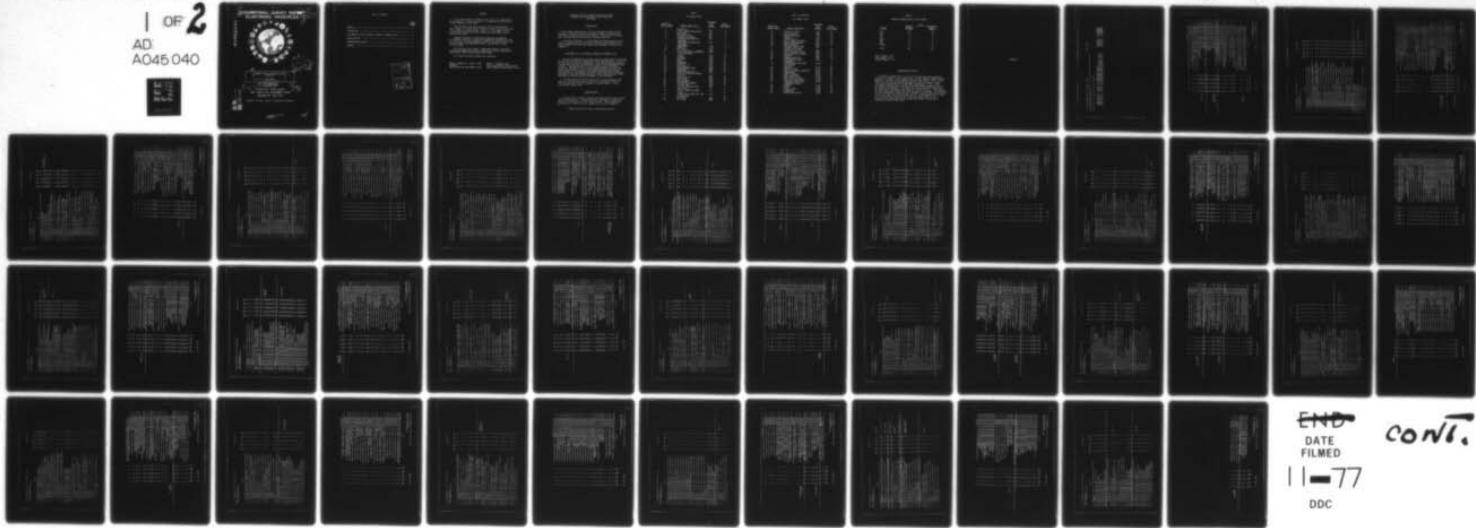
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OCCUPATIONAL SURVEY REPORT ELECTRONIC PRINCIPLES

19 Apr-Jun 77

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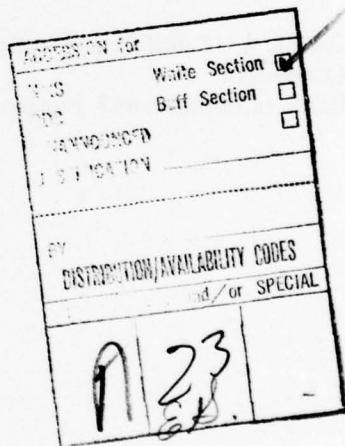
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PREFACE

This report presents a summary of the results of a detailed Air Force Electronic Principles Survey of the Communications Electronics Systems Specialist, AFSC 30455.

The Electronic Principles Inventory (EPI) was developed by Major Thomas J. O'Connor and Mr. Hendrick W. Ruck and the survey data were analyzed by Captain Harold T. Welch. 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

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Chief, Occupational Survey Branch
USAF Occupational Measurement Center

ELECTRONIC PRINCIPLES OCCUPATIONAL SURVEY REPORT
COMMUNICATIONS ELECTRONICS SYSTEMS SPECIALIST
AFSC 30455

INTRODUCTION

↓ This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned as Communications Electronics Systems Specialist (AFSC 30455). 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 30455 airmen worldwide. Responses from 233 individuals represented 53 percent of the total of all AFSC 30455 personnel. Table 2 shows the percentage distribution by major command of the survey incumbents.

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TABLE 1
EPI SUBJECT AREAS

SEQUENCE OF SUBJECT AREAS	SUBJECT AREA TITLE	BEGINNING ITEM NUMBER	GPSUM PAGE NUMBER
1	MATHEMATICS	A1	2
2	DIRECT CURRENT AND VOLTAGE	A15	2
3	RESISTANCE	A24	2
4	MULTIMETER USES	B52	3
5	ALTERNATING CURRENT	B61	4
6	INDUCTORS AND INDUCTIVE REACTANCE	B67	4
7	CAPACITORS AND CAPACITIVE REACTANCE	C92	5
8	TRANSFORMERS	C128	6
9	MAGNETISM	C171	7
10	RCL CIRCUITS	D185	8
11	SERIES AND PARALLEL RESONANCE (TIME CONSTANTS)	D229	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	
42	WAVESHAPING CIRCUITS	N834	30
43	SINGLE SIDEBAND SYSTEMS	0845	30
44	PULSE MODULATION SYSTEMS	0875	31
45	ANTENNAS	0914	32
46	TRANSMISSION LINES	P953	34
47	WAVEGUIDES AND CAVITY RESONATORS	P984	
48	MICROWAVE AMPLIFIERS AND OSCILLATORS	P1034	35
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	
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>	<u>PERCENT ASSIGNED</u>	<u>PERCENT OF SAMPLE</u>
AFCS	64	65
AFSC	7	9
TAC	6	6
ATC	2	5
PACAF	6	4
ADC	4	3
MAC	5	3
OTHERS	6	5
TOTAL	100	100

Total Assigned - 439
Total Sample - 233
Percent Sampled - 53%

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 five 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 Multimeter Uses (p. 3) and Soldering (p. 11) to low in areas such as Infrared (pp. 41-42) and Display Tubes (p. 43). Additional AFSC 30455 data can be obtained upon request to the Chief, Occupational Survey Branch (OMY).

APPENDIX

PCT MHS RESPONDING *YES* BY SELECTED GRPS

1 TABULATION OF ELECTRONIC PRINCIPLES UTILIZATION DATA FOR SELECTED GROUPS
IN THE JO455 CAREER FIELD.

REPORTS ON THE FOLLOWING GROUPS WERE REQUESTED

GROUP IDENTITY	SPC151	ALL AIRMEN DAFSC 30455 STATIONED IN CONUS	CONTAINING 233 MEMBERS
GROUP IDENTITY	SPC152	ALL AIRMEN DAFSC 30455 STATIONED OVERSEAS	CONTAINING 213 MEMBERS
GROUP IDENTITY	SPC153	ALL AIRMEN DAFSC 30455 ASSIGNED TO AFCS	CONTAINING 20 MEMBERS
GROUP IDENTITY	SPC154	ALL AIRMEN DAFSC 30455 ASSIGNED TO AFSC	CONTAINING 152 MEMBERS
GROUP IDENTITY	SPC155	ALL AIRMEN DAFSC 30455 ASSIGNED TO AFSC	CONTAINING 20 MEMBERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DYS-TSK

- A 1 AL-01 IN YOUR PRESENT JOB, DO YOU USE INSTRUMENTS, SUCH AS METERS OR OSCILLOSCOPES, IN WHICH IT IS NECESSARY TO OF 10⁶ AMPLIFY OR ATTENUATE VOLTAGE, RESISTANCE, ETC., BY POWERS OF 10?
- A 2 AL-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 AL-03 DO YOU REARRANGE AND SOLVE FORMULAS OR EQUATIONS?
- A 4 AL-04 DO YOU CALCULATE THE SQUARE ROOT OF A QUANTITY?
- A 5 AL-05 DO YOU SOLVE FOR UNKNOWN QUANTITIES?
- A 6 AL-06 DO YOU CONVERT NUMBERS TO LOGARITHMS?
- A 7 AL-07 DO YOU USE LOGARITHM TABLES IN ANY TYPE OF CALCULATIONS?
- A 8 AL-08 DO YOU SOLVE QUADRATIC EQUATIONS?
- A 9 AL-09 DO YOU USE THE NATURAL SYSTEM OF LOGARITHMS?
- A 10 AL-10 DO YOU PERFORM CALCULATIONS ON VECTOR QUANTITIES?
- A 11 AL-11 DO YOU WORK WITH TRIGONOMETRIC FUNCTIONS SUCH AS SINE, COSINE, OR TANGENT?
- A 12 AL-12 DO YOU DETERMINE AREAS OF PLANE FIGURES?
- A 13 AL-13 DO YOU SOLVE OR USE SIMULTANEOUS EQUATIONS?
- A 14 AL-14 DO YOU SOLVE OR USE PROPORTIONS?
- A 15 AL-01 DO YOU USE THE TERM VOLTAGE OR VOLT (V)?
- A 16 AL-02 DO YOU USE THE TERM ELECTROMOTIVE FORCE (EMF)?
- A 17 AL-03 DO YOU USE THE TERM OHM?
- A 18 AL-04 DO YOU USE THE TERM ION?
- A 19 AL-05 DO YOU USE THE TERM DYNE?
- A 20 AL-06 DO YOU USE THE TERM AMPERE?
- A 21 AL-07 DO YOU USE THE TERM NEUTRON?
- A 22 AL-08 DO YOU USE THE TERM COULOMB?
- A 23 AL-09 DO YOU USE THE TERM PROTON?
- A 24 AL-01 DO YOU WORK WITH RESISTORS IN YOUR PRESENT JOB?
- A 25 AL-02 DO YOU INSPECT RESISTORS?
- A 26 AL-03 DO YOU CLEAN RESISTORS?
- A 27 AL-04 DO YOU ADJUST RESISTORS?
- A 28 AL-05 DO YOU CHECK OHMIC VALUE OF RESISTORS?
- A 29 AL-06 DO YOU REMOVE OR REPLACE RESISTORS?
- A 30 AL-07 DO YOU USE OR REFER TO TEMPERATURE COEFFICIENTS FOR RESISTORS ON ANY TASKS YOU PERFORM?
- A 31 AL-08 DO YOU USE OR REFER TO RESISTOR SYMBOLS SUCH AS FIXED RESISTOR SYMBOLS OR TAPPED RESISTOR SYMBOLS?
- A 32 AL-09 DO YOU IDENTIFY OR CLASSIFY THE RESISTORS YOU WORK WITH AS CARBON, FIXED WIRE, SLIDE TAP, RHEOSTAT, OR POTENTIOMETER?
- A 33 AL-10 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE OHMIC VALUE OF RESISTANCE?

	>PC 151	SPC 152	SPC 153	SPC 154	SPC 155
MATHEMATICS					
84	84	90	82	92	
45	44	50	48	40	
41	43	25	45	45	
22	23	10	25	20	
39	40	25	42	35	
9	10	0	9	10	
11	12	0	11	5	
12	12	15	13	10	
6	7	0	7	5	
17	18	0	16	25	
14	15	0	13	20	
11	11	5	11	5	
12	13	5	14	10	
24	25	10	27	15	
94	94	95	93	95	
42	43	30	41	50	DIRECT CURRENT
93	93	95	91	95	AND VOLTAGE
26	28	10	28	20	
9	10	0	9	10	
93	92	95	91	95	
23	24	15	22	25	
21	22	15	21	25	
22	23	15	22	20	
83	82	90	81	85	
91	90	100	90	95	
84	84	85	86	85	
88	88	90	88	95	RESISTANCE
91	90	100	90	95	
91	89	100	91	95	
33	33	5	34	35	
91	90	95	88	95	
89	89	95	88	100	
92	92	100	91	100	

PCT HRS RESPONDING YES BY SELECTED GRPS
 TASK GROUP SUMMARY
 DIFFERENT MEMBERS PERFORMING

GP SUM PAGE J

OF-TSK	SPC	SPC	SPC	SPC	SPC	SPC
A 34 A-11 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE TOLERANCE.	88	89	75	88	95	
A 35 A-12 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE FAILURE RATE.	21	23	0	26	20	
A 36 A-13 DO YOU MAKE DECISIONS IN WHICH YOU MUST DETERMINE HOW TWO OR MORE BATTERIES MUST BE CONNECTED TOGETHER TO ACHIEVE A SPECIFIC VOLTAGE.	35	36	25	34	40	
A 37 A-14 DO YOU USE OR REFER TO THE SCHEMATIC SYMBOLS WHICH REPRESENT BATTERIES, FUSES, CONDUCTORS, LAMPS, OR SWITCHES.	91	91	95	89	95	
A 38 A-15 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES RESISTIVE CIRCUITS.	69	70	50	72	60	
A 39 A-16 DO YOU CALCULATE TOTAL CURRENT FOR SERIES RESISTIVE CIRCUITS.	56	60	40	61	60	
A 40 A-17 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES RESISTIVE CIRCUITS.	68	69	60	70	60	
A 41 A-18 DO YOU CALCULATE POWER DISSIPATION FOR SERIES RESISTIVE CIRCUITS.	52	53	40	55	50	
A 42 A-19 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES PARALLEL RESISTIVE CIRCUITS.	64	67	35	68	60	
A 43 A-20 DO YOU CALCULATE TOTAL CURRENT FOR SERIES PARALLEL RESISTIVE CIRCUITS.	55	57	35	57	60	
A 44 A-21 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES PARALLEL RESISTIVE CIRCUITS.	63	64	45	65	60	
A 45 A-22 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR SERIES PARALLEL RESISTIVE CIRCUITS.	52	54	30	51	60	
A 46 A-23 DO YOU CALCULATE POWER DISSIPATION FOR SERIES PARALLEL RESISTIVE CIRCUITS.	48	49	35	49	50	
A 47 A-24 DO YOU CALCULATE TOTAL RESISTANCE FOR PARALLEL RESISTIVE CIRCUITS.	65	67	45	68	60	
A 48 A-25 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RESISTIVE CIRCUITS.	55	57	40	57	60	
A 49 A-26 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR PARALLEL RESISTIVE CIRCUITS.	63	64	45	65	60	
A 50 A-27 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR PARALLEL RESISTIVE CIRCUITS.	51	53	30	49	60	
A 51 A-28 DO YOU CALCULATE POWER DISSIPATION FOR PARALLEL RESISTIVE CIRCUITS.	48	50	35	51	50	
b 52 B-01 DO YOU MEASURE RESISTANCE.	92	92	100	90	95	
b 53 B-02 DO YOU REPAIR OHMMETERS.	9	9	5	6	5	
b 54 B-03 DO YOU MEASURE VOLTMETERS.	92	91	100	89	95	
b 55 B-04 DO YOU REPAIR VOLTMETERS.	7	8	5	5	5	MULTIMETER USES
b 56 B-05 DO YOU REPAIR AMMETERS.	7	8	0	6	5	
b 57 B-06 DO YOU MEASURE CURRENT.	82	84	70	80	95	
b 58 B-07 DO YOU USE MULTIMETERS.	91	90	100	89	95	
b 59 B-08 DO YOU DIRECTLY USE A QUANTITY OF CHARGE CALLED A COULOMB.	8	8	0	8	5	
b 60 B-09 DO YOU READ SCHEMATICS.	93	92	100	90	100	

**TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING**

b	61	B-2-11 DO YOU USE OR REFER TO THE TERM EFFECTIVE VOLTAGE IN HARMONIC (HARSI).	70	76	75	76	76	76	76	76	76
b	62	B-2-24 DO YOU USE OR REFER TO THE TERM PEAK TO PEAK VOLTAGE.	87	88	80	86	90	86	90	86	90
b	63	B-2-24 DO YOU USE OR REFER TO THE TERM AVERAGE VOLTAGE (UC).	78	77	85	86	80	76	80	76	80
b	64	B-2-24 DO YOU USE OR REFER TO THE TERM WAVE LENGTH.	61	60	55	59	55	59	55	59	55
b	65	H-2-25 DO YOU USE OR REFER TO THE TERM FREQUENCY.	91	91	90	89	100	90	89	100	90
b	66	H-2-25 DO YOU USE OR REFER TO THE TERM INSTANTANEOUS VALUE.	36	36	35	33	50	35	33	50	35
b	67	H-2-25 DO YOU WORK WITH INDUCTORS OR CIRCUITS CONTAINING INDUCTORS, CHOKES, OR CHOKE COILS IN YOUR PRESENT JOB.	83	83	85	78	95	85	78	95	85
b	68	H-3-2-2 DO YOU INSPECT INDUCTORS.	85	85	80	85	90	85	80	85	90
b	69	S-2-3 DO YOU CLEAN INDUCTORS.	76	77	65	77	85	76	77	85	76
b	70	S-2-3 DO YOU ADJUST INDUCTORS.	82	83	75	82	80	82	80	82	80
b	71	B-3-2-5 DO YOU REMOVE OR REPLACE INDUCTORS.	82	82	80	82	90	82	80	82	90
b	72	H-3-2-6 DO YOU USE OR REFER TO INDUCTANCE.	75	77	55	76	85	75	77	55	76
b	73	H-3-2-7 DO YOU USE OR REFER TO亨RIES.	64	67	40	64	80	64	67	40	64
b	74	H-3-2-8 DO YOU USE OR REFER TO INDUCTIVE REACTANCE.	56	58	35	57	55	56	58	35	57
b	75	B-3-2-9 DO YOU USE OR REFER TO COPPER LOSS IN INDUCTORS.	13	14	0	11	20	13	14	0	11
b	76	B-3-2-10 DO YOU USE OR REFER TO HYSTERESIS LOSS IN INDUCTORS.	19	20	5	14	25	19	20	5	14
b	77	B-3-2-11 DO YOU USE OR REFER TO EDDY CURRENT LOSS IN INDUCTORS.	18	20	5	16	20	18	20	5	16
b	78	B-3-2-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTANCE IS PROPORTIONAL TO THE SQUARE OF THE NUMBER OF TURNS OF THE COIL.	18	19	5	17	10	18	19	5	17
b	79	B-3-13 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.	15	15	16	0	14	15	15	16	0
b	80	B-3-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS INVERSELY PROPORTIONAL TO ITS LENGTH.	13	14	5	13	5	13	14	5	13
b	81	B-3-15 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.	15	16	0	13	15	15	16	0	13
b	82	B-3-16 DO YOU CALCULATE INDUCTANCE FOR PARTICULAR INDUCTORS USING FORMULAS.	16	17	5	17	15	16	17	5	17
b	83	B-3-17 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES.	21	22	10	21	15	21	22	10	21
b	84	H-3-18 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN PARALLEL.	21	22	10	20	15	21	22	10	20
b	85	B-3-19 DO YOU CALCULATE THE TOTAL INDUCTANCE FROM INDUCTORS IN SERIES-PARALLEL CIRCUITS.	20	21	10	20	15	20	21	10	20
b	86	B-3-20 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LAGS VOLTAGE IN AC INDUCTOR CIRCUITS.	40	42	25	38	40	40	42	25	38
b	87	B-3-21 DO YOU CALCULATE INDUCTIVE REACTANCE.	26	28	10	26	30	26	28	10	26
b	88	H-3-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTIVE REACTANCE IS DIRECTLY PROPORTIONAL TO FREQUENCY.	33	35	15	33	35	33	35	15	33
b	89	B-3-23 DO YOU WORK WITH POWER INDUCTORS.	45	46	40	45	55	45	46	40	45
b	90	B-3-24 DO YOU WORK WITH AUDIO FREQUENCY INDUCTORS.	70	70	67	80	70	70	67	80	70
b	91	B-3-25 DO YOU WORK WITH RADIO FREQUENCY INDUCTORS.	60	60	57	65	60	60	57	65	60

PCT WORKS RESPONDING *YES* TO SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

GPSUM7 PAGE 5

	SPC						
DY-TSK							
C 92 C1-01 DO YOU WORK WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS IN YOUR PRESENT JOB.	82	81	90	78	80	91	90
C 93 C1-02 DO YOU INSPECT CAPACITORS.	91	90	100	91	95	84	84
C 94 C1-03 DO YOU CLEAN CAPACITORS.	83	84	75	84	90	86	86
C 95 C1-04 DO YOU ADJUST CAPACITORS.	88	86	100	86	90	86	86
C 96 C1-05 DO YOU TEST CAPACITORS.	89	86	95	89	95	89	89
C 97 C1-06 DO YOU DISCHARGE CAPACITORS.	89	89	90	89	95	89	89
C 98 C1-07 DO YOU REMOVE OR REPLACE CAPACITORS.	89	88	100	90	95	88	88
C 99 C1-08 DO YOU USE OR REFER TO DISTRIBUTED CAPACITANCE.	28	29	25	30	30	25	25
C 100 C1-09 DO YOU USE OR REFER TO ORBITAL STRESS OF ELECTRONS IN A DIELECTRIC.	6	6	5	7	5	5	5
C 101 C1-10 DO YOU USE OR REFER TO FARADS, MICROFARADS, OR PICOFARADS.	90	90	95	88	95	88	95
C 102 C1-11 DO YOU USE OR REFER TO CAPACITANCE.	86	86	80	85	85	86	86
C 103 C1-12 DO YOU USE OR REFER TO DIELECTRIC CONSTANT	22	22	20	21	20	20	20
C 104 C1-13 DO YOU USE OR REFER TO WORKING VOLTAGE RATING OF CAPACITORS	87	86	95	84	100	87	87
C 105 C1-14 DO YOU USE OR REFER TO CAPACITIVE REACTANCE	50	52	30	51	45	60	62
C 106 C1-15 DO YOU USE OR REFER TO CAPACITOR COLOR CODES	88	88	88	86	80	88	88
C 107 C1-16 DO YOU WORK WITH CAPACITORS IN DC CIRCUITS	87	86	100	84	80	86	86
C 108 C1-17 DO YOU WORK WITH CAPACITORS IN AC CIRCUITS	85	85	80	84	85	85	85
C 109 C1-18 DO YOU WORK WITH CAPACITORS IN CIRCUITS WITH BOTH DC AND AC	18	17	30	17	20	18	17
C 110 C1-19 DO YOU WORK WITH CAPACITORS IN DON'T REMEMBER WHICH CIRCUITS	21	23	10	23	15	21	23
C 111 C1-20 DO YOU CALCULATE CAPACITANCE FOR PARTICULAR CAPACITORS USING FORMULAS	13	13	10	12	20	13	13
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	12	13	5	13	20	12	13
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	38	39	30	40	45	38	39
C 114 C1-23 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES	36	36	30	38	40	36	36
C 115 C1-24 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN PARALLEL	38	39	30	40	45	38	39
C 116 C1-25 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES-PARALLEL CIRCUITS	56	59	45	56	55	56	56
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	39	40	35	36	40	39	40
C 118 C1-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEADS VOLTAGE IN AC CAPACITOR CIRCUITS	35	35	30	32	45	35	35
C 119 C1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITIVE REACTANCE IS INVERSELY PROPORTIONAL TO FREQUENCY	24	26	5	26	30	24	26
C 120 C1-29 DO YOU CALCULATE CAPACITIVE REACTANCE							

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		SPC 151	SPC 152	SPC 153	SPC 154	SPC 155
DY-15X						
C 121	C1-JU DO YOU WORK WITH ROTOR-STATON (VARIABLE) CAPACITORS	74	74	75	72	75
C 122	C1-31 DO YOU WORK WITH COMPRESSION (TRIMMER) CAPACITORS	80	79	90	78	80
C 123	C1-32 DO YOU WORK WITH ELECTROLYTIC (FIXED) CAPACITORS	92	92	95	89	100
C 124	C1-J3 DO YOU WORK WITH PAPER (FIXED) CAPACITORS	86	89	75	87	100
C 125	C1-34 DO YOU WORK WITH MICA (FITTED) CAPACITORS	89	90	85	88	100
C 126	C1-35 DO YOU WORK WITH CERAMIC (FIXED) CAPACITORS	90	90	90	87	100
C 127	C1-36 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF CAPACITORS	13	15	14	10	
C 128	C2-U1 DO YOU WORK WITH TRANSFORMERS IN YOUR PRESENT JOB	79	79	80	76	85
C 129	C2-U2 DO YOU INSPECT TRANSFORMERS	86	86	85	88	90
C 130	C2-U3 DO YOU CLEAN TRANSFORMERS	79	80	65	82	85
C 131	C2-U4 DO YOU ADJUST TRANSFORMERS	48	51	25	51	55
C 132	C2-U5 DO YOU TROUBLESHOOT TRANSFORMERS	61	83	60	84	80
C 133	C2-U6 DO YOU REMOVE OR REPLACE COMPLETE TRANSFORMERS	96	86	85	88	90
C 134	C2-U7 DO YOU REMOVE OR REPLACE TRANSFORMER PARTS, SUCH AS THE PRIMARY WINDING	11	12	0	12	25
C 135	C2-U8 DO YOU MAKE A DISTINCTION BETWEEN MUTUAL INDUCTION AND MUTUAL INDUCTANCE (MI)	12	12	5	9	25
C 136	C2-U9 DO YOU USE THE SYMBOL FOR MUTUAL INDUCTANCE, M	9	10	0	9	15
C 137	C2-U10 DO YOU REFER TO OR USE THE COEFFICIENT OF COUPLING WHEN WORKING WITH TRANSFORMERS	18	19	10	15	30
C 138	C2-U11 DO YOU CALCULATE TURNS RATIOS FOR TRANSFORMERS USING CURRENT OR VOLTAGE RATIOS	20	20	15	20	30
C 139	C2-U12 DO YOU REFER TO REFLECTED IMPEDANCE WHEN WORKING WITH TRANSFORMERS	21	20	25	20	20
C 140	C2-U13 DO YOU CALCULATE IMPEDANCE INTERACTIONS FOR TRANSFORMERS	13	14	0	13	15
C 141	C2-U14 DO YOU WORK WITH AUTOTRANSFORMERS	53	55	30	54	60
C 142	C2-U15 DO YOU WORK WITH POWER TRANSFORMERS	88	88	85	88	90
C 143	C2-U16 DO YOU WORK WITH AUDIO TRANSFORMERS	84	83	90	81	90
C 144	C2-U17 DO YOU WORK WITH RADIO FREQUENCY TRANSFORMERS	57	56	60	51	65
C 145	C2-U18 DO YOU WORK WITH DON'T REMEMBER WHAT TYPE OF TRANSFORMERS	14	13	20	15	15
C 146	C2-U19 DO YOU CHECK TRANSFORMERS FOR OPEN WINDINGS BY MEASURING RESISTANCE	88	88	95	87	90
C 147	C2-U20 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING RESISTANCE	81	80	85	78	90
C 148	C2-U21 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING OUTPUT VOLTAGES	73	75	60	73	80
C 149	C2-U22 DO YOU MEASURE RESISTANCE OF TRANSFORMER WINDINGS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO	40	41	35	39	30
C 150	C2-U23 DO YOU MEASURE OUTPUT VOLTAGE OF TRANSFORMERS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO	55	55	55	51	50
C 151	C2-U24 DO YOU REFER TO BASIC TRANSFORMER SCHEMATIC SYMBOLS FOR TRANSFORMERS	91	90	95	88	95

FCT MARKS RESPONDING *YES* AT SELECTED GRPS
 TASK GROUP SUMMARY
 PART-C MEMBERS PERFORMING

GPMUN PAGE 7

DT-TSK

	SPC	SPC	SPC	SPC	SPC	SPC
	151	152	153	154	155	
C 152 C2-25 DO YOU REFER TO MULTIPLE SECONDARY-WINDINGS SCHEMATIC SYMBOLS FOR TRANSFORMERS	82	81	90	79	85	
C 153 C2-26 DO YOU REFER TO MULTIPLE TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS	85	84	90	83	80	
C 154 C2-27 DO YOU REFER TO CENTER TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS	88	88	95	86	95	
C 155 C2-28 DO YOU REFER TO AIR CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS	70	70	65	65	90	
C 156 C2-29 DO YOU REFER TO IRON CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS	78	78	75	75	90	
C 157 C2-30 DO YOU REFER TO COMBINATIONS OF THE ABOVE SCHEMATIC SYMBOLS FOR TRANSFORMERS	74	73	80	70	85	
C 158 C2-31 DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING SCHEMATIC SYMBOLS	42	43	30	40	50	
C 159 C2-32 DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN TRANSFORMERS YOU WORK WITH	41	42	25	39	40	
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	31	31	30	30	25	
C 161 C2-34 DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN RATIOS FOR TRANSFORMERS	50	50	55	49	55	
C 162 C2-35 DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS USING TURNS RATIOS	22	23	20	21	20	
C 163 C2-36 DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS USING TURNS RATIOS	20	21	10	19	20	
C 164 C2-37 DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH THREE PHASE TRANSFORMERS	17	17	10	17	10	
C 165 C2-38 DO YOU INSPECT THREE PHASE TRANSFORMERS	12	13	10	15	10	
C 166 C2-39 DO YOU CLEAN OR LUBRICATE THREE PHASE TRANSFORMERS	9	9	5	11	10	
C 167 C2-40 DO YOU ADJUST THREE PHASE TRANSFORMERS	7	8	0	7	15	
C 168 C2-41 DO YOU TROUBLESHOOT THREE PHASE TRANSFORMERS	13	14	10	16	15	
C 169 C2-42 DO YOU REMOVE OR REPLACE COMPLETE THREE PHASE TRANSFORMERS	15	15	20	17	15	
C 170 C2-43 DO YOU REMOVE OR REPLACE THREE PHASE TRANSFORMER PARTS SUCH AS WINDINGS	5	5	0	5	15	
C 171 C3-01 DO YOU USE OR REFER TO PERMANENT MAGNETS	69	68	75	67	60	
C 172 C3-02 DO YOU USE OR REFER TO TEMPORARY MAGNETS	48	49	40	50	40	MAGNETISM
C 173 C3-03 DO YOU USE OR REFER TO RETENTIVITY OF MAGNETIC MATERIALS	18	20	5	18	15	
C 174 C3-04 DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC MATERIALS	17	18	5	15	15	
C 175 C3-05 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS	20	22	5	20	20	
C 176 C3-06 DO YOU USE OR REFER TO RESIDUAL MAGNETISM	31	32	15	31	25	
C 177 C3-07 DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE OR FLUX	41	42	25	43	25	
C 178 C3-08 DO YOU USE OR REFER TO HELLER'S THEORY OF MAGNETISM	10	11	0	10	5	

PCT MARKS RESPONDING 'YES' BY SELECTED UNITS

TASK GROUP SUMMARY
PRESENT MEMBERS PERFORMING

APPENDIX PAGE 4

UNITS	SPC 151	SPC 152	SPC 153	SPC 154	SPC 155
C 179 CJ-09 DO YOU USE OR REFER TO DOMAIN THEORY OF MAGNETISM	11	12	5	11	10
C 180 CJ-10 DO YOU USE OR REFER TO MAGNETIC INDUCTION	34	35	25	32	35
C 181 CJ-11 DO YOU USE OR REFER TO FLUX DENSITY					
C 182 CJ-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT FOR MAGNETIC POLES, LIKE POLES REPEL AND UNLIKE POLES ATTRACT	25	26	15	22	25
C 183 CJ-13 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE DIRECTION OF MAGNETIC FIELDS ABOUT STRAIGHT WIRES	56	56	55	59	50
C 184 CJ-14 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE NORTH POLE OF A CURRENT CARRYING COIL	26	27	15	26	25
U 185 DI-01 DO YOU WORK WITH RC, LH, RCL CIRCUITS IN YOUR PRESENT JOB	21	23	10	20	25
D 186 DI-02 DO YOU USE OR REFER TO VECTORS WHEN WORKING WITH RCL CIRCUITS					
D 187 DI-03 DO YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN WORKING WITH RCL CIRCUITS	12	13	0	11	10
D 188 DI-04 DO YOU USE OR REFER TO SINE WHEN WORKING WITH RCL CIRCUITS	17	18	0	14	20
D 189 DI-05 DO YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL CIRCUITS	14	15	0	13	15
D 190 DI-06 DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL CIRCUITS	14	15	0	12	15
D 191 DI-07 DO YOU USE OR REFER TO WATTS WHEN WORKING WITH RCL CIRCUITS	46	46	50	43	50
D 192 DI-08 DO YOU USE OR REFER TO TRUE POWER (PT) WHEN WORKING WITH RCL CIRCUITS	28	28	30	28	20
D 193 DI-09 DO YOU USE OR REFER TO MAXIMUM POWER (PMM) WHEN WORKING WITH RCL CIRCUITS	32	32	35	32	30
D 194 DI-10 DO YOU USE OR REFER TO AVERAGE POWER (PAVE) WHEN WORKING WITH RCL CIRCUITS	30	30	35	30	20
D 195 DI-11 DO YOU USE OR REFER TO APPARENT POWER (PA) WHEN WORKING WITH RCL CIRCUITS	24	25	10	23	20
D 196 DI-12 DO YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING WITH RCL CIRCUITS	27	27	25	26	25
D 197 DI-13 DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN WORKING WITH RCL CIRCUITS	64	65	55	64	60
D 198 DI-14 DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH RCL CIRCUITS	67	67	65	66	60
D 199 DI-15 DO YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH RCL CIRCUITS	57	57	60	57	55
D 200 DI-16 DO YOU USE OR REFER TO RESONANT FREQUENCY WHEN WORKING WITH RCL CIRCUITS	61	62	60	62	55
D 201 DI-17 DO YOU USE OR REFER TO HALF POWER POINTS WHEN WORKING WITH RCL CIRCUITS	23	23	20	21	10
D 202 DI-18 DO YOU USE OR REFER TO BANDPASS REGION WHEN WORKING WITH RCL CIRCUITS	51	51	50	51	40
D 203 DI-19 DO YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH RCL CIRCUITS	40	42	25	41	45

PCT MARS RESPONDING "YES" BY SELECTED GROUPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

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	DY-TSK	SPC 151	SPC 152	SPC 153	SPC 154	SPC 155
D 204	01-20 DO YOU USE OR REFER TO TANK CIRCUITS WHEN WORKING WITH RCL CIRCUITS	65	67	45	67	60
D 205	01-21 DO YOU DETERMINE VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS	9	9	5	8	5
D 206	01-22 DO YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS	14	15	0	11	15
D 207	01-23 DO YOU CALCULATE TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS	21	22	5	23	15
D 208	01-24 DO YOU CALCULATE PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS	10	10	5	9	10
D 209	01-25 DO YOU CALCULATE TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS	18	20	5	20	15
D 210	01-26 DO YOU CALCULATE IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS	10	11	5	9	10
D 211	01-27 DO YOU CALCULATE APPARENT POWER (PA) FOR SERIES RCL CIRCUITS	12	12	10	11	10
D 212	01-28 DO YOU CALCULATE TRUE POWER (PT) FOR SERIES RCL CIRCUITS	12	13	10	12	10
D 213	01-29 DO YOU CALCULATE POWER FACTORS (PF) FOR SERIES RCL CIRCUITS	13	13	10	13	10
D 214	01-30 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RCL CIRCUITS	18	19	5	19	10
D 215	01-31 DO YOU CALCULATE IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS	9	9	5	8	5
D 216	01-32 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING THE ASSUMED VOLTAGE METHOD	12	13	0	13	15
D 217	01-33 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING OHM'S LAW	21	22	15	21	15
C 218	01-34 DO YOU CHECK CAPACITORS USING OMMETERS	72	72	70	68	75
D 219	01-35 DO YOU CHECK CAPACITORS USING SUBSTITUTION	69	69	70	67	75
U 220	01-36 DO YOU CHECK INDUCTORS USING OMMETERS	71	71	70	67	75
D 221	01-37 DO YOU CHECK INDUCTORS USING SUBSTITUTION	56	57	50	55	60
D 222	01-38 DO YOU USE OR REFER TO THE GENERAL RULE THAT $\theta = \tan^{-1} \frac{X}{R}$, $PF = 1$, AND $PA = PT$ FOR RESONANT CIRCUITS	4	5	0	4	5
D 223	01-39 DO YOU CALCULATE RESONANT FREQUENCIES FOR RCL CIRCUITS	22	23	10	23	20
D 224	01-40 DO YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE RESONANT FREQUENCY FOR SERIES RCL CIRCUITS	32	33	25	31	35
D 225	01-41 DO YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT RESONANT FREQUENCY FOR PARALLEL RCL CIRCUITS	27	27	20	24	30
D 226	01-42 DO YOU USE OR REFER TO THE GENERAL RULE THAT HALF POWER POINTS ARE AT 70.7% PERCENT OF THE PEAK CURRENT VALUE	26	27	20	24	25
D 227	01-43 DO YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO $\frac{1}{Q}$	31	33	15	32	35
L 228	01-44 DO YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE + CAPACITANCE, OR INDUCTANCE WILL AFFECT CURRENT OR PHASE ANGLES FOR RCL CIRCUITS	21	23	10	20	20

TASK GROUP SUMMARY
PRESENT MEMBERS PERFORMING

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- D 429 D-2-U1 IN YOUR PRESENT JOB, DO YOU WORK WITH USE, OR REFER TO SERIES OR PARALLEL RESONANT CIRCUITS OR TIME CONSTANTS
- D 430 D-2-U2 DO YOU WORK WITH USE, OR REFER TO TIME CONSTANTS
- D 431 D-2-U3 DO YOU WORK WITH USE, OR REFER TO AVAILABLE VOLTAGE
- D 432 D-3-U4 DO YOU WORK WITH USE, OR REFER TO TRANSIENT INTERVALS
- D 433 D-2-U5 DO YOU USE OR REFER TO THE GENERAL RULE THAT A CAPACITOR IS FULLY CHARGED (OR DISCHARGED) AFTER FIVE (5) TIME CONSTANTS (TC)
- D 434 D-2-U6 DO YOU USE OR REFER TO UNIVERSAL TIME CONSTANT CHARTS
- D 435 D-2-U7 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CIRCUIT CURRENT OR COMPONENT VOLTAGES AFTER A SPECIFIC TIME FOR RC OR LR CIRCUITS
- D 436 D-2-U8 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE TIME REQUIRED FOR CIRCUIT CURRENT OR COMPONENT VOLTAGES TO REACH SPECIFIC VALUES FOR RC OR LR CIRCUITS
- D 437 D-2-U9 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE COMPONENT VALUES REQUIRED FOR CIRCUIT CURRENT AND COMPONENT VOLTAGES TO REACH SPECIFIC VALUES IN SPECIFIC TIMES
- D 438 D-2-U10 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT IN LC CIRCUITS REACHES ITS MINIMUM VALUE (OR ZERO) AFTER FIVE (5) TIME CONSTANTS
- D 439 D-2-U11 DO YOU WORK WITH CIRCUITS USED AS FILTERS IN YOUR PRESENT JOB
- D 440 D-3-U2 DO YOU INSPECT FILTER CIRCUITS
- D 441 D-3-U3 DO YOU CLEAN FILTER CIRCUITS
- D 442 D-3-U4 DO YOU ALIGN OR ADJUST FILTER CIRCUITS
- D 443 D-3-U5 DO YOU TROUBLESHOOT TO THE FILTER CIRCUIT LEVEL
- D 444 D-3-U6 DO YOU TROUBLESHOOT TO COMPONENT PARTS
- D 445 D-3-U7 DO YOU REMOVE OR REPLACE THE COMPLETE FILTER CIRCUIT
- D 446 D-3-U8 DO YOU REMOVE OR REPLACE FILTER CIRCUIT COMPONENT PARTS
- D 447 D-3-U9 DO YOU WORK WITH LOW PASS FILTERS
- D 448 D-3-U10 DO YOU WORK WITH HIGH PASS FILTERS
- D 449 D-3-U11 DO YOU WORK WITH BANDPASS FILTERS
- D 450 D-3-U12 DO YOU WORK WITH BAND-REJECT FILTERS
- D 451 D-3-U13 DON'T REMEMBER WHICH TYPE OF FILTER YOU WORK WITH
- D 452 D-3-U14 DO YOU WORK WITH L-SECTION FILTER CONFIGURATION
- D 453 D-3-U15 DO YOU WORK WITH T-SECTION FILTER CONFIGURATION
- D 454 D-3-U16 DO YOU WORK WITH PI-SECTION FILTER CONFIGURATION
- D 455 D-3-U17 DON'T REMEMBER WHICH TYPE FILTER CONFIGURATION
- D 456 D-3-U18 DO THE FILTERS YOU WORK WITH USE PARALLEL RESONANT CIRCUITS
- D 457 D-3-U19 DO THE FILTERS YOU WORK WITH USE SERIES-PARALLEL CIRCUITS
- D 458 D-3-U20 DO THE FILTERS YOU WORK WITH USE SERIES RESONANT CIRCUITS

	SPC 151	SPC 152	SPC 153	SPC 154	SPC 155	SERIES AND PARALLEL RESONANCE (TIME CONSTANTS)
46	49	15	47	55		
47	46	10	44	45		
48	31	5	30	25		
49	27	5	24	20		
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PCT MARS RESPONDING YES BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		SPC	SPC	SPC	SPC	SPC
E 259	E3-21 DON'T REMEMBER WHICH TYPE OF BASIC CIRCUIT	151	152	153	154	155
E 260	D3-22 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CAPACITANCE OR INDUCTANCE VALUES REQUIRED FOR SPECIFIC FILTERS	19	20	25	23	20
E 261	E1-01 DO YOU WORK WITH COUPLING DEVICES IN YOUR PRESENT JOB	82	81	85	78	80
E 262	E1-02 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITY THE COMPONENTS ASSOCIATED WITH RC COUPLING	78	78	80	76	80
E 263	E1-03 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITY THE COMPONENTS ASSOCIATED WITH IMPEDANCE COUPLING	75	75	75	73	80
E 264	E1-04 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITY THE COMPONENTS ASSOCIATED WITH TRANSFORMER COUPLING	79	78	80	76	85
E 265	E1-05 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM RC COUPLING	77	77	85	74	80
E 266	E1-06 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM IMPEDANCE COUPLING	74	74	75	70	80
E 267	E1-07 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM TRANSFORMER COUPLING	77	77	80	74	85
E 268	E1-08 DO YOU WORK WITH DIRECTLY COUPLED CIRCUITS	61	80	85	76	85
E 269	E1-09 DO YOU WORK WITH CAPACITIVE-RESISTIVE COUPLED CIRCUITS	77	77	85	73	80
E 270	E1-10 DO YOU WORK WITH CAPACITIVE-INDUCTIVE COUPLED CIRCUITS	76	77	75	72	80
E 271	E1-11 DO YOU WORK WITH TRANSFORMER COUPLED CIRCUITS	79	78	85	74	85
E 272	E1-12 DON'T REMEMBER WHICH TYPE OF COUPLING CIRCUITS	12	12	10	13	5
E 273	E2-01 IN YOUR PRESENT JOB, DO YOU PERFORM SOLDERING TECHNIQUES OR INSPECT OR EVALUATE SOLDERED CONNECTIONS	87	86	95	88	100
E 274	E2-02 DO YOU SELECT TYPE OF SOLDER TO USE	73	73	65	73	80
E 275	E2-03 DO YOU ADD FLUX TO CONNECTIONS	70	70	75	69	85
E 276	E2-04 DO YOU CLEAN CONNECTIONS USING SOLVENTS	80	80	80	82	85
E 277	E2-05 DO YOU STRIP INSULATION FROM WIRES	89	88	100	89	95
E 278	E2-06 DO YOU CONNECT OR DISCONNECT HEAT SINKS	87	86	95	88	95
E 279	E2-07 DO YOU BEND OR SHAPE WIRES ON LEADS	89	86	100	89	95
E 280	E2-08 DO YOU CUT WIRES	89	88	100	89	95
E 281	E2-09 DO YOU FILE OR SHAPE SOLDERING IRON TIPS	78	78	70	82	75
E 282	E2-10 DO YOU TIN SOLDERING IRON TIPS	86	86	90	87	95
E 283	E2-11 DO YOU CLEAN SOLDERING IRON TIPS	89	88	100	89	95
E 284	E2-12 DO YOU CLEAN ELECTRICAL SURFACES USING ERASERS	85	85	80	86	90
E 285	E2-13 DO YOU TIN OR PRE-TIN CONDUCTORS	86	85	90	87	95
E 286	E2-14 DO YOU INSPECT SOLDERED CONNECTIONS	89	88	100	89	95
E 287	E2-15 DO YOU DESOLDER CONNECTIONS BY WICKING	64	65	50	66	90
E 288	E2-16 DO YOU DESOLDER CONNECTIONS USING VACUUM DESOLDERING TOOLS	79	79	95	79	90
E 289	E2-17 DO YOU CUT COMPONENT LEADS TO REMOVE COMPONENTS	66	66	65	67	70
E 290	E2-18 DO YOU CRUSH COMPONENTS FOR REMOVAL	27	27	20	27	35

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 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

TASK	SPC 151	SPC 152	SPC 153	SPC 154	SPC 155
E 491 E2-19 DO YOU MAKE HANDWIRE CONNECTIONS	45	85	90	86	95
E 492 E2-20 DO YOU MAKE PRINTED CIRCUIT BOARD CONNECTIONS	88	87	100	89	95
E 493 E2-21 DO YOU SOLDER PASSIVE COMPONENTS SUCH AS RESISTORS OR CAPACITORS ON PRINTED CIRCUIT BOARDS	88	86	100	88	90
E 494 E2-22 DO YOU SOLDER ACTIVE COMPONENTS SUCH AS SOLID-STATE DIODES OR TRANSISTORS ON PRINTED CIRCUIT BOARDS	88	87	100	89	95
E 295 E3-01 DO YOU WORK WITH RELAYS IN YOUR PRESENT JOB	76	75	90	71	40
E 296 E3-02 DO YOU ADJUST RELAYS	43	45	30	44	45
E 297 E3-03 DO YOU CLEAN RELAYS	66	66	70	64	70
E 298 E3-04 DO YOU INSPECT RELAYS	73	71	90	68	80
E 299 E3-05 DO YOU REMOVE OR REPLACE COMPLETE RELAYS	70	69	80	68	75
E 300 E3-06 DO YOU REMOVE OR REPLACE PARTS OR RELAYS	24	26	5	26	35
E 301 E3-07 DO YOU TROUBLESHOOT RELAYS	71	70	80	69	65
E 302 E3-08 DO YOU STRAIGHTEN RELAY CONTACTS	52	53	50	53	45
E 303 E3-09 DO YOU PERFORM TASKS ON RELAY CONTACTS	60	59	75	57	65
E 304 E3-10 DO YOU PERFORM TASKS ON RELAY CORES	17	18	5	17	25
E 305 E3-11 DO YOU USE SCHEMATIC SYMBOLS FOR RELAY COILS	20	22	5	20	30
E 306 E3-12 DO YOU PERFORM TASKS ON RELAY ARMATURES	26	27	15	25	35
E 307 E3-13 DO YOU PERFORM TASKS ON RELAY SPRINGS	34	35	25	33	35
E 308 E3-14 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY OPEN (NO) SCHEMATIC SYMBOLS FOR RELAYS	62	62	60	56	70
E 309 E3-15 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY CLOSED (NC) SCHEMATIC SYMBOLS FOR RELAYS	61	61	55	55	75
E 310 E3-16 DO YOU USE OR REFER TO SINGLE POLE, DOUBLE THROW (SPDT) SCHEMATIC SYMBOLS FOR RELAYS	60	60	55	53	70
E 311 E3-17 DO YOU USE OR REFER TO DOUBLE POLE, DOUBLE THROW (DPDT) SCHEMATIC SYMBOLS FOR RELAYS	61	61	55	53	70
E 312 E3-18 DO YOU USE OR REFER TO OTHER RELAY SYMBOLS SCHEMATIC SYMBOLS FOR RELAYS	55	54	60	50	65
E 313 E3-19 DO YOU CHECK ELECTRICAL CONTINUITY OF COILS BY MEASURING RESISTANCE	71	70	65	66	75
F 314 F1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH MICROPHONES	76	77	60	78	90
F 315 F1-02 DO YOU INSPECT MICROPHONES	73	74	60	75	90
F 316 F1-03 DO YOU CLEAN MICROPHONES	64	65	55	66	85
F 317 F1-04 DO YOU OPERATE MICROPHONES	71	73	73	85	85
F 318 F1-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT PARTS OR MICROPHONES	56	56	55	56	65
F 319 F1-06 DO YOU TROUBLESHOOT DOWN TO MICROPHONE PARTS	46	48	25	48	55
F 320 F1-07 DO YOU REMOVE OR REPLACE COMPLETE MICROPHONES	71	73	55	74	80
F 321 F1-08 DO YOU REMOVE OR REPLACE MICROPHONE PARTS	42	43	30	44	50
F 322 F1-09 DO YOU PERFORM TASKS ON CARBON MICROPHONES	50	51	40	51	50
F 323 F1-10 DO YOU PERFORM TASKS ON CAPACITOR MICROPHONES	28	29	15	28	35
F 324 F1-11 DO YOU PERFORM TASKS ON CRYSTAL MICROPHONES	29	30	20	28	25
F 325 F1-12 DO YOU PERFORM TASKS ON DYNAMIC MICROPHONES	61	62	55	61	65
F 326 F1-13 DO YOU PERFORM TASKS ON VELOCITY RIBBON MICROPHONES	21	25	20	25	25

PCT MARS RESPONDING *YES* BY SELECTED GRPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

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	BY-TASK			SPC			SPC			SPC		
	151	152	153	154	155		151	152	153	154	155	
F 327 F2-U1 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH SPEAKERS	76	77	70	78	90							
F 328 F2-U2 DO YOU INSPECT SPEAKERS	73	73	65	76	85							
F 329 F2-U3 DO YOU CLEAN SPEAKERS	61	63	40	66	75							
F 330 F2-U4 DO YOU OPERATE SPEAKERS	72	73	55	74	85							
F 331 F2-U5 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT PARTS OF SPEAKERS	67	67	65	67	70							
F 332 F2-U6 DO YOU TROUBLESHOOT DOWN TO SPEAKER PARTS	29	31	5	32	35							
F 333 F2-U7 DO YOU REMOVE OR REPLACE COMPLETE SPEAKERS	73	74	65	76	80							
F 334 F2-U8 DO YOU REMOVE OR REPLACE SPEAKER PARTS	18	18	10	16	40							
F 335 F2-U9 DO YOU PERFORM ANY TASKS ON SPEAKER CONES	18	17	20	17	25							
F 336 F2-U10 DO YOU PERFORM ANY TASKS ON SPEAKER SPIDERS	6	7	0	7	10							
F 337 F2-U11 DO YOU PERFORM ANY TASKS ON SPEAKER FIELD COILS	9	10	5	10	15							
F 338 F2-U12 DO YOU PERFORM ANY TASKS ON SPEAKER VOICE COILS	14	14	10	14	25							
F 339 F2-U13 DO YOU PERFORM ANY TASKS ON SPEAKER PERMANENT MAGNETS	13	14	5	14	20							
F 340 F2-U14 DO YOU PERFORM ANY TASKS ON SPEAKER ELECTROMAGNETS	12	12	5	13	15							
F 341 F2-U15 DO YOU PERFORM ANY TASKS ON SPEAKER SOFT IRON CORES	9	10	0	11	15							
F 342 F3-U1 DO YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB	91	90	95	89	95							
F 343 F3-U2 DO YOU USE OSCILLOSCOPES TO PERFORM OPERATIONAL CHECKS	90	90	90	89	85							
F 344 F3-U3 DO YOU USE OSCILLOSCOPES TO PERFORM ALIGNMENTS OR ADJUSTMENTS	88	88	90	86	95							
F 345 F3-U4 DO YOU USE OSCILLOSCOPES TO TROUBLESHOOT ELECTRONIC CIRCUITS	90	89	100	87	95							
F 346 F3-U5 DO YOU USE OSCILLOSCOPES TO MEASURE FREQUENCY	80	82	65	83	75							
F 347 F3-U6 DO YOU USE OSCILLOSCOPES TO MEASURE TIME	79	80	60	80	85							
F 348 F3-U7 DO YOU USE OSCILLOSCOPES TO OBSERVE LISAJOUS PATTERNS	37	38	25	37	50							
F 349 F3-U8 DO YOU USE OSCILLOSCOPES TO OBSERVE SIGNALS WHILE UTILIZING ATTENUATOR PROBLEMS	87	87	90	86	90							
F 350 F3-U9 DO YOU USE OSCILLOSCOPES TO MAKE FREQUENCY OR TIME MEASUREMENTS USING DELAY TIME MULTIPLIERS	69	70	55	72	70							
F 351 F3-U10 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE	82	84	70	83	90							
F 352 F3-U11 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE	77	79	55	78	80							
F 353 F3-U12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE	88	87	100	86	90							
G 354 G1-U1 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT JOB	88	88	95	84	95							
G 355 G1-U2 DO YOU INSPECT DIODES	88	88	90	86	95							
G 356 G1-U3 DO YOU REMOVE OR REPLACE DIODES	87	86	95	87	90							
G 357 G1-U4 DO YOU CHECK DIODES USING AN INSTRUMENT	89	88	95	87	90							
G 358 G1-U5 DO YOU USE ENERGY LEVEL DIAGRAMS IN YOUR WORK WITH DIODES	8	8	10	5	10							
G 359 G1-U6 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES, TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE, TO COMPUTE FORWARD OR REVERSE LIAS RESISTANCE	21	21	15	23	5							
G 360 G1-U7 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR DIODDS	31	32	15	32	30							

TASK GROUP SUMMARY
PENTIMENT MEMBERS PERFORMING

DRAFTS

	SPC 151	SPC 152	SPC 153	SPC 154	SPC 155
G J61 G1-3H DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES?	71	71	75	72	70
G J62 G1-9 DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO OTHER ELECTRONIC COMPONENTS, SUCH AS RESISTORS, BASED ON THEIR PHYSICAL APPEARANCE?	83	83	85	82	80
G J63 G1-10 DO YOU REFER TO OR DO YOU DETERMINE THE GENERAL EFFECTS OF DOPING ON CURRENT FLOW?	21	21	15	20	25
G J64 G1-11 DO YOU USE OR REFER TO MEASUREMENTS OF FORWARD BIAS RESISTANCE?	78	79	65	77	75
G J65 G1-12 DO YOU USE OR REFER TO DIODE COLOR CODING?	54	54	55	51	45
G J66 G1-13 DO YOU USE OR REFER TO CENTRIFUGAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS?	7	8	5	6	10
G J67 G1-14 DO YOU USE OR REFER TO CENTRIPETAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS?	6	7	5	5	10
G J68 G1-15 DO YOU USE OR REFER TO DIODE NUMBERING SYSTEM, SUCH AS IN 51B	81	81	85	79	95
G J69 G1-16 DO YOU USE OR REFER TO KINETIC ENERGY OF AN ELECTRON MOVING IN ORBIT	8	8	5	9	10
G J70 G1-17 DO YOU USE OR REFER TO POTENTIAL ENERGY OF AN ELECTRON MOVING IN ORBIT	9	10	5	4	10
G J71 G1-18 DO YOU USE OR REFER TO MEASUREMENTS OF REVERSE BIAS RESISTANCE?	79	80	65	77	85
G J72 G1-19 DO YOU USE OR REFER TO NUMBER OF ELECTRONS IN A PARTICULAR SHELL OR ORBIT	12	12	5	11	10
G J73 G1-20 DO YOU USE OR REFER TO PERMISSIBLE ENERGY LEVELS OF AN ORBITING ELECTRON	6	6	5	5	10
G J74 G1-21 DO YOU USE OR REFER TO FORBIDDEN ENERGY LEVELS OF AN ORBITING ELECTRON	6	6	5	5	10
G J75 G1-22 DO YOU USE OR REFER TO VALENCE ELECTRONS (THOSE IN THE OUTERMOST SHELL)	13	14	5	14	10
G J76 G1-23 DO YOU USE OR REFER TO ATOMIC NUMBER (TOTAL NUMBER OF ELECTRONS IN ATOM)	11	12	5	12	10
G J77 G1-24 DO YOU USE OR REFER TO SYMBOLS ON THE DIODE WHICH INDICATE THE CATHODE END	85	85	85	81	90
G J78 G1-25 DO YOU NEED TO KNOW WHICH MATERIALS ARE USED IN THE CONSTRUCTION OF DIODES SUCH AS GERMANIUM OR SILICON	48	48	45	47	55
G J79 G1-26 DO YOU NEED TO KNOW THAT SEMICONDUCTORS HAVE NEGATIVE TEMPERATURE COEFFICIENTS OF RESISTANCE (AS TEMPERATURE INCREASES, RESISTANCE DECREASES)?	46	47	35	46	50
G J80 G1-27 DO YOU USE OR REFER TO PN JUNCTION DIODE CHARACTERISTIC CURVES, SUCH AS VOLTAGE - CURRENT	24	24	20	26	15
CHARACTERISTIC CURVES (PERHAPS YOU DO THIS TO IDENTIFY POINTS OF STRUCTURAL BREAKDOWN OR OPERATING REGIONS?)	71	72	65	70	65
G J81 G1-28 DO YOU DETERMINE WHETHER PN JUNCTION DIODES ARE FORWARD BIASED OR REVERSE BIASED WHEN YOU READ OR INTERPRET CIRCUIT DIAGRAMS	13	13	10	13	10
G J82 G1-29 DO YOU USE OR REFER TO VALENCE BAND IN SEMICONDUCTOR MATERIALS	13	13	10	13	10

PCT MARKS RESPONDING *YES* BY SELECTED GRPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

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DYS-TSK	SPC				
	151	152	153	154	155
G 383 GI-30 DO YOU USE OR REFER TO FORBIDDEN BAND IN SEMICONDUCTOR MATERIALS	8	8	5	7	5
G 384 GI-31 DO YOU USE OR REFER TO CONDUCTION BAND IN SEMICONDUCTOR MATERIALS	10	11	5	9	10
G 385 GI-32 DO YOU USE OR REFER TO COVALENT BONDING IN SEMICONDUCTOR MATERIALS	12	13	5	13	5
G 386 GI-33 DO YOU USE OR REFER TO ELECTRON-HOLE PAIR CREATED IN SEMICONDUCTORS	13	14	5	13	5
G 387 GI-34 DO YOU USE OR REFER TO ELECTRON FLOW OR MOLE FLOW IN SEMICONDUCTORS	21	22	10	22	15
G 388 GI-35 DO YOU USE OR REFER TO DONOR IMPURITY IN SEMICONDUCTORS	14	15	5	14	10
G 389 GI-36 DO YOU USE OR REFER TO ACCEPTOR IMPURITY IN SEMICONDUCTORS	14	15	5	14	10
G 390 GI-37 DO YOU USE OR REFER TO P-TYPE SEMICONDUCTOR MATERIAL	95	46	45	45	45
G 391 GI-38 DO YOU USE OR REFER TO N-TYPE SEMICONDUCTOR MATERIAL	46	46	45	47	45
G 392 GI-39 DO YOU USE OR REFER TO MAJORITY CARRIERS IN SEMICONDUCTORS	18	18	10	18	15
G 393 GI-40 DO YOU USE OR REFER TO MINORITY CARRIERS IN SEMICONDUCTORS	17	16	10	17	15
G 394 GI-41 DO YOU USE OR REFER TO JUNCTION RECOMBINATION IN SEMICONDUCTORS	13	13	15	11	10
G 395 GI-42 DO YOU USE OR REFER TO DEPLETION REGION IN SEMICONDUCTORS	20	20	15	20	10
G 396 GI-43 DO YOU USE OR REFER TO RELATIONSHIP BETWEEN BARRIER WIDTH AND DIFFERENCE OF POTENTIAL	15	16	5	15	10
G 397 GI-44 DO YOU USE OR REFER TO THE I _{0.1} ; BACK TO FRONT RESISTANCE RATIO FOR DIODES	77	77	75	73	85
G 398 GI-45 DO YOU USE OR REFER TO BARRIER HEIGHT IN SEMICONDUCTORS	10	11	5	11	10
G 399 GI-46 DO YOU USE OR REFER TO DIODE SUBSTITUTION INFORMATION	75	74	85	72	95
G 400 GI-47 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD CURRENT DIODE RATINGS	42	44	25	42	55
G 401 GI-48 DO YOU USE OR REFER TO PEAK RECURRENT FORWARD CURRENT DIODE RATINGS	35	36	20	34	55
G 402 GI-49 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT DIODE RATINGS	38	39	25	37	55
G 403 GI-50 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE DIODE RATINGS	54	54	50	51	60
G 404 G2-01 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB.	91	91	95	89	100
G 405 G2-02 DO YOU INSPECT TRANSISTORS	90	90	95	89	100
G 406 G2-03 DO YOU REMOVE OR REPLACE TRANSISTORS	89	88	100	89	95
G 407 G2-04 DO YOU CHECK TRANSISTORS USING AN INSTRUMENT	90	89	100	88	95
G 408 G2-05 DO YOU USE OR REFER TO Emitter - Base (EBI) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	90	89	95	88	95
G 409 G2-06 DO YOU USE OR REFER TO COLLECTOR - BASE (CBI) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	89	89	90	88	95

PCT MARS RESPONDING 'YES' BY SELECTED GROUPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

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UY=15k

SPC	SPC	SPC	SPC	SPC
151	152	153	154	155
88	88	85	87	90

6 410 G2-J7 DO YOU USE OR REFER TO Emitter - Collector (EC) RESISTANCE MEASUREMENTS
 6 411 G2-08 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE Emitter - BASE JUNCTION
 6 412 G2-09 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE COLLECTOR - BASE JUNCTION
 6 413 G2-10 DO YOU USE OR REFER TO THE PHYSICAL SIZE OF THE TRANSISTOR STRUCTURE (COLLECTOR, BASE AND Emitter)
 6 414 G2-11 DO YOU USE OR REFER TO LEAKAGE CURRENT (ICBO) IN A TRANSISTOR
 6 415 G2-12 DO YOU USE OR REFER TO TRANSISTOR SCHEMATIC SYMBOLS
 6 416 G2-13 DO YOU USE OR REFER TO TRANSISTOR NOTATION SUCH AS Q1, Q2, Q3, ETC
 6 417 G2-14 DO YOU USE OR REFER TO TRANSISTOR SUBSTITUTION INFORMATION
 6 418 G2-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE TRANSISTOR BASE CURRENT IB IS NORMALLY SIGNIFICANTLY SMALLER THAN THE Emitter CURRENT IE USUALLY IB BEING 2 TO 8 PERCENT OF IE
 6 419 G2-16 DO YOU USE THE INFORMATION THAT THE EFFECT OF Emitter BASE VOLTAGE ON BASE CURRENT IS THE CONTROLLING FACTOR FOR TRANSISTORS

SPC	SPC	SPC	SPC	SPC
42	42	40	42	45
57	58	50	57	60

6 420 G2-17 DO YOU USE THE GENERAL RULE THAT LEAKAGE CURRENT INCREASES AS TEMPERATURE INCREASES
 6 421 G2-18 DO YOU USE OR REFER TO TRANSISTOR CHARACTERISTIC CURVES

SPC	SPC	SPC	SPC	SPC
29	29	25	28	30
42	42	40	42	45

G 422 G2-19 DO YOU USE OR REFER TO BETA TRANSISTOR GAINS
 G 423 G2-20 DO YOU USE OR REFER TO ALPHA TRANSISTOR GAINS
 G 424 G2-21 DO YOU USE OR REFER TO GAMMA TRANSISTOR GAINS
 G 425 G2-22 DO YOU CALCULATE BETA TRANSISTOR GAINS
 G 426 G2-23 DO YOU CALCULATE ALPHA TRANSISTOR GAINS
 G 427 G2-24 DO YOU CALCULATE GAMMA TRANSISTOR GAINS
 G 428 GJ-01 DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR PRESENT JOB

SPC	SPC	SPC	SPC	SPC
86	86	90	84	90
87	87	85	86	90

G 429 GJ-02 DO YOU INSPECT TRANSISTOR AMPLIFIERS
 G 430 GJ-03 DO YOU ALIGN OR ADJUST TRANSISTOR AMPLIFIERS
 G 431 GJ-04 DO YOU TROUBLESHOOT TO THE AMPLIFIER CIRCUIT LEVEL
 G 432 GJ-05 DO YOU TROUBLESHOOT TO AMPLIFIER COMPONENTS
 G 433 GJ-06 DO YOU REMOVE OR REPLACE THE COMPLETE AMPLIFIER
 G 434 GJ-07 DO YOU REMOVE OR REPLACE AMPLIFIER COMPONENTS
 G 435 GJ-08 DO YOU USE OR REFER TO (COMMON Emitter) THE CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A CHANGE IN BASE

SPC	SPC	SPC	SPC	SPC
81	82	75	79	90
86	86	85	84	90

TRANSISTOR AMPLIFIERS

6 436 GJ-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

SPC	SPC	SPC	SPC	SPC
30	31	20	32	15

PCP MARKS RESPONDING 'YES' BY SELECTED GRPS
TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

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Q-Y-TASK	SPC	SPC	SPC	SPC	SPC	SPC
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	49	50	40	51	45	
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	27	28	20	28	15	
6 439 G3=12 DO YOU USE OR REFER TO (COMMON Emitter) THE CHANGE IN BASE CURRENT WHICH RESULTS FROM AN INPUT SIGNAL	47	48	40	47	50	
6 440 G3=13 DO YOU USE OR REFER TO (COMMON Emitter) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN BASE CURRENT WHICH RESULTS FROM A SPECIFIC INPUT SIGNAL	29	30	20	31	20	
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)	12	12	10	11	5	
6 442 G3=15 DO YOU USE OR REFER TO THE OPERATING POINT Q (QUIESCENT POINT) FOR A TRANSISTOR	25	26	10	24	20	
6 443 G3=16 DO YOU CALCULATE THE SPECIFIC QUIESCENT POINT FOR A PARTICULAR TRANSISTOR	14	14	15	12	5	
6 444 G3=17 DO YOU MEASURE VOLTAGE GAIN USED IN THE COMMON Emitter configuration	62	63	50	64	60	
6 445 G3=18 DO YOU MEASURE CURRENT GAIN USED IN THE COMMON Emitter configuration	45	46	30	46	50	
6 446 G3=19 DO YOU MEASURE POWER GAIN USED IN THE COMMON Emitter configuration	40	42	25	41	40	
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 BASE COLLECTOR VOLTAGE TO DETERMINE THE VOLTAGE GAIN	18	18	10	18	5	
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	16	17	10	17	5	
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	13	14	10	14	10	
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 THIS TRANSISTOR)	23	23	25	22	30	
6 451 G3=24 DO YOU COMPUTE THE STATIC OPERATING POINT [Q] OF A TRANSISTOR AT DIFFERENT TEMPERATURES	11	10	15	9	15	
6 452 G3=25 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH Emitter (Shunting) Resistor Stabilization	51	52	40	51	35	
6 453 G3=26 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH Self-Bias Stabilization	50	50	45	49	40	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY=TSK	SPC 151	SPC 152	SPC 153	SPC 154	SPC 155
) G 454 GJ-27 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH THERMISTOR STABILIZATION	52	53	45	51	50	
) G 455 GJ-28 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH FORWARD BIAS DIODE STABILIZATION	52	52	45	53	40	
) G 456 GJ-29 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH REVERSE BIAS DIODE STABILIZATION	51	51	45	51	40	
) G 457 GJ-30 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH DOUBLE DIODE STABILIZATION	41	41	40	41	35	
) G 458 GJ-31 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM Emitter (swamping) RESISTOR STABILIZATION	52	54	35	54	45	
) G 459 GJ-32 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM SELF-BIAS STABILIZATION	52	53	40	52	50	
) G 460 GJ-33 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THERMISTOR STABILIZATION	52	53	45	53	55	
) G 461 GJ-34 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM FORWARD BIAS DIODE STABILIZATION	52	52	45	53	50	
) G 462 GJ-35 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM REVERSE BIAS DIODE STABILIZATION	51	52	45	53	50	
) G 463 GJ-36 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM DOUBLE DIODE STABILIZATION	41	42	30	41	45	
) G 464 GJ-37 DO YOU IDENTIFY AMPLITUDE DISTORTION FOR TRANSISTOR CIRCUITS	56	57	40	55	70	
) G 465 GJ-38 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF AMPLITUDE DISTORTION	68	68	65	66	75	
) G 466 GJ-39 DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS	61	62	50	61	70	
) G 467 GJ-40 DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS	49	51	30	49	55	
) G 468 GJ-41 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF PHASE DISTORTION	48	49	35	48	55	
) G 469 GJ-42 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF FREQUENCY DISTORTION	59	59	55	59	70	
) G 470 GJ-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	37	37	40	36	35	
) G 471 GJ-44 DO YOU DETERMINE THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS	47	47	45	48	50	
) G 472 GJ-45 DO YOU TROUBLESHOOT OR REPAIR PARALLEL PHASE AMPLIFIERS	38	38	35	41	20	
) G 473 GJ-46 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	76	76	80	75	80	
) G 474 GJ-47 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY CIRCUITS	58	57	60	55	65	
) G 475 GJ-48 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	52	51	60	52	55	

TASK GROUP SUMMARY

176 G3=49 DU YOU TROUBLESHOOT OR REPAIR CASCADE=CONNECTED
DY=T5K

0Y-T5K

PC1 MHS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

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SPC	SPC	SPC	SPC	SPC
151	152	153	154	155
81	81	75	82	95
83	79	95	78	75
64	64	60	65	60
78	77	85	79	80
81	80	90	79	80
80	79	90	78	80
77	77	75	74	80
60	61	55	59	50

SPC	SPC	SPC	SPC	SPC
151	152	153	154	155
59	59	50	59	50
70	72	45	70	65
61	60	65	62	40
75	75	70	72	80
33	34	25	34	25
31	32	25	34	10
31	32	20	35	10
31	32	20	34	10
64	64	60	63	65
72	73	55	71	75
74	76	55	72	80
13	12	20	13	0

DVTASK				
H 513	H3-U2 DO YOU INSPECT OSCILLATORS	WHICH USE OR REFER TO AMPLITUDE STABILITY	REGULATORY FEEDBACK	PIEZOELECTRIC EFFECT
H 514	H3-U3 DO YOU ALIGN OR ADJUST OSCILLATORS	OR REFER TO FREQUENCY STABILITY	TO OSCILLATOR CIRCUIT LEVEL	CIRCUIT DAMPING
H 515	H3-U4 DO YOU REMOVE OR REPLACE COMPLETE OSCILLATORS	OR REFER TO DAMPING	UNDER DAMPING	OVER DAMPING
H 516	H3-U5 DO YOU REMOVE OR REPLACE OSCILLATOR COMPONENTS	OR REFER TO DAMPING	CHITICAL DAMPING	
H 517	H3-U6 DO YOU TROUBLESHOOT TO OSCILLATOR CIRCUIT LEVEL	OR REFER TO DAMPING		
H 518	H3-U7 DO YOU TROUBLESHOOT TO OSCILLATOR COMPONENTS	OR REFER TO DAMPING		
H 519	H3-U8 DO YOU USE OR REFER TO FEEDBACK	OR REFER TO DAMPING		
H 520	H3-U9 DO YOU USE OR REFER TO FREQUENCY DETERMINING DEVICES	OR REFER TO DAMPING		
	(FDD)			
H 521	H3-10 DO YOU USE OR REFER TO AMPLITUDE STABILITY	59	50	50
H 522	H3-11 DO YOU USE OR REFER TO FREQUENCY STABILITY	70	72	45
H 523	H3-12 DO YOU USE OR REFER TO DAMPING	61	60	65
H 524	H3-13 DO YOU USE OR REFER TO REGENERATIVE FEEDBACK	75	75	70
H 525	H3-14 DO YOU USE OR REFER TO PIEZOELECTRIC EFFECT	33	34	25
H 526	H3-15 DO YOU USE OR REFER TO CRITICAL DAMPING	31	32	25
H 527	H3-16 DO YOU USE OR REFER TO UNDER DAMPING	31	32	20
H 528	H3-17 DO YOU USE OR REFER TO OVER DAMPING	31	32	20
H 529	H3-18 DO YOU WORK WITH OSCILLATORS WHICH USE LC TANK	64	64	60
H 530	H3-19 DO YOU WORK WITH OSCILLATORS WHICH USE RC NETWORKS AS	63	65	65
FUU				
H 531	H3-20 DO YOU WORK WITH OSCILLATORS WHICH USE CRYSTALS AS	72	73	71
FDD				
H 532	H3-21 DO YOU WORK WITH OSCILLATORS WHICH USE DON'T REMEMBER WHICH TYPE OF FDD	13	12	20
	WHICH TYPE OF FDD			
H 533	H3-22 DO YOU WORK WITH SERIES HARTLEY SINUSOIDAL OSCILLATORS	50	52	35
H 534	H3-23 DO YOU WORK WITH SHUNT HARTLEY SINUSOIDAL OSCILLATORS	48	50	30
H 535	H3-24 DO YOU WORK WITH COLPITT SINUSOIDAL OSCILLATORS	52	54	35
H 536	H3-25 DO YOU WORK WITH CLAPP SINUSOIDAL OSCILLATORS	16	16	10
H 537	H3-26 DO YOU WORK WITH BUTLER SINUSOIDAL OSCILLATORS	16	17	5
H 538	H3-27 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF OSCILLATORS	27	25	23
	MULTIVIBRATORS			
I 539	I1-O1 DO YOU WORK WITH MULTIVIBRATORS IN YOUR PRESENT JOB	75	76	70
I 540	I1-O2 DO YOU INSPECT WAVE GENERATING OR SHAPING CIRCUITS	70	70	60
I 541	I1-O3 DO YOU ALIGN OR ADJUST WAVE GENERATING OR SHAPING CIRCUITS	65	67	45
I 542	I1-O4 DO YOU CALIBRATE WAVE GENERATING OR SHAPING CIRCUITS	54	56	30
I 543	I1-O5 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUITS	68	69	50
I 544	I1-O6 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUITS	68	69	69
I 545	I1-O7 DO YOU REMOVE OR REPLACE COMPLETE WAVE GENERATING OR SHAPING CIRCUITS	66	69	60
I 546	I1-O8 DO YOU REMOVE OR REPLACE WAVE GENERATING OR SHAPING COMPONENTS	66	66	60
I 547	I1-O9 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK CIRCUITS	63	64	50

PCT MARS RESPONDING *YES* BY SELECTED WRAPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

GPSUM) PAGE 21

DY-TSK

		SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
)	1 548 11-10 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN RC NETWORKS	67	69	50	67	70					
)	1 549 11-11 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN CRYSTALS	57	58	45	60	50					
)	1 550 11-12 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN DON'T REMEMBER WHICH TYPE OF FOO	16	15	20	15	10					
)	1 551 11-13 DO YOU WORK WITH ASTABLE MULTIVIBRATORS	61	64	35	65	55					
)	1 552 11-14 DO YOU WORK WITH MONOSTABLE MULTIVIBRATORS	63	65	45	64	60					
)	1 553 11-15 DO YOU WORK WITH BIStABLE MULTIVIBRATORS	63	66	35	66	55					
)	1 554 11-16 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE MULTIVIBRATORS	14	13	25	11	15					
)	1 555 12-01 DO YOU WORK WITH LIMITERS OR CLAMPERS IN YOUR PRESENT JOB	79	78	85	77	80					
)	1 556 12-02 DO YOU WORK WITH SERIES DIODE LIMITERS	55	56	45	54	55	LIMITERS AND CLAMPERS				
)	1 557 12-03 DO YOU WORK WITH SHUNT DIODE LIMITERS	51	53	35	51	55					
)	1 558 12-04 DO YOU WORK WITH LIMITERS WITH BLAS	46	49	45	48	35					
)	1 559 12-05 DO YOU WORK WITH ZENER DIODE LIMITERS	60	60	55	57	70					
)	1 560 12-06 DO YOU WORK WITH TRANSISTOR LIMITERS	59	60	55	57	65					
)	1 561 12-07 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF LIMITERS	17	16	25	18	10					
)	1 562 12-08 DO YOU WORK WITH BASIC DIODE CLAMPING CIRCUITS	64	65	50	62	65					
)	1 563 12-09 DO YOU WORK WITH DIODE CLAMPING CIRCUITS WITH BIAS	60	62	45	61	60					
)	1 564 12-10 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF CLAMPING CIRCUIT	19	18	25	20	20					
)	1 565 13-01 IN YOUR PRESENT JOB, DO YOU WORK ON EQUIPMENT WHICH CONTAINS ELECTRON TUBES	87	87	85	89	95					
)	1 566 13-02 DO YOU CHECK ELECTRON TUBES TO SEE IF THEY ARE GOOD	86	87	75	89	95					
)	1 567 13-03 DO YOU USE TUBE TESTERS TO CHECK ELECTRON TUBES	85	86	70	89	95	ELECTRON TUBES				
)	1 568 13-04 DO YOU USE MULTIMETERS TO CHECK ELECTRON TUBES	62	62	60	64	55					
)	1 569 13-05 DO YOU USE SCOPES TO CHECK ELECTRON TUBES	61	61	55	64	65					
)	1 570 13-06 DO YOU USE SUBSTITUTION TO CHECK ELECTRON TUBES	65	65	60	66	90					
)	1 571 13-07 DO YOU USE OR REFER TO CUTOFF	54	57	50	59	60					
)	1 572 13-08 DO YOU USE OR REFER TO PEAK INVERSE VOLTAGE RATING	33	34	15	34	30					
)	1 573 13-09 DO YOU USE OR REFER TO PEAK CURRENT RATING	35	37	20	35	35					
)	1 574 13-10 DO YOU USE OR REFER TO TRANSIT TIME	27	28	10	29	20					
)	1 575 13-11 DO YOU USE OR REFER TO PLATE DISSIPATION RATING	30	31	20	32	35					
)	1 576 13-12 DO YOU USE OR REFER TO SATURATION	55	56	50	59	60					
)	1 577 13-13 DO YOU USE OR REFER TO DC PLATE RESISTANCE	41	42	30	41	50					
)	1 578 13-14 DO YOU COMPUTE ACTUAL VALUES OF THE DC PLATE RESISTANCE FOR ELECTRON TUBES	16	16	10	16	20					
)	1 579 13-15 DO YOU USE OR REFER TO PLATE VOLTAGE	83	83	80	84	85					
)	1 580 13-16 DO YOU USE OR REFER TO PLATE CURRENT	65	66	50	67	70					
)	1 581 13-17 DO YOU USE OR REFER TO GRID VOLTAGE	81	82	75	84	80					
)	1 582 13-18 DO YOU USE OR REFER TO GRID CURRENT	64	65	50	66	65					
)	1 583 13-19 DO YOU USE OR REFER TO CATHODE VOLTAGE	81	82	75	84	80					
)	1 584 13-20 DO YOU USE OR REFER TO CATHODE CURRENT	65	66	67	70	70					
)	1 585 13-21 DO YOU USE OR REFER TO THE TRIODE AMPLIFICATION FACTOR (THE AMPLIFICATION FACTOR FOR TRIODES IS DEFINED AS THE RATIO OF CHANGE IN PLATE VOLTAGE TO A CHANGE IN GRID VOLTAGE)	26	26	20	26	15					

PCT WORKS RESPONDING "YES" BY SELECTED GNPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

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D-Y-TSK	SPC						
	151	152	153	154	155		
I 586 13-42 DO YOU CALCULATE ACTUAL VALUES OF TRIODE AMPLIFICATION FACTORS	12	13	5	13	10		
I 587 13-43 DO YOU USE OR REFER TO MULTIGRID (TETRODE, PENTODE, ETC) AMPLIFICATION FACTORS	24	24	15	26	20		
I 588 13-24 DO YOU USE OR REFER TO ELECTRON TUBE TRANSCONDUCTANCE (G, WHICH IS MEASURED IN MHOS)	18	19	10	20	15		
I 589 13-25 DO YOU CALCULATE ACTUAL VALUES OF ELECTRON TUBE TRANSCONDUCTANCES	11	12	5	13	10		
I 590 13-26 DO YOU USE OR REFER TO THE ELECTRON TUBE PARAMETER CALLED AC PLATE RESISTANCE	15	16	5	18	15		
I 591 13-27 DO YOU CALCULATE ACTUAL VALUES OF AC PLATE RESISTANCE	12	14	0	14	10		
I 592 13-28 DO YOU USE OR REFER TO ELECTRON TUBE INTERELECTRODE CAPACITANCE	28	30	10	30	25		
I 593 13-29 DO YOU USE OR REFER TO CHARACTERISTIC CURVES IN YOUR WORK WITH ELECTRON TUBES	20	20	15	21	20		
I 594 13-30 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE VOLTAGE FOR A SPECIFIED BIAS	18	19	10	20	10		
I 595 13-31 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE CURRENT FOR A SPECIFIED BIAS	17	18	5	20	10		
I 596 13-32 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR CUTOFF	21	22	10	24	10		
I 597 13-33 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR SATURATION	21	23	10	26	10		
I 598 13-34 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER GAIN	58	60	30	58	60		
I 599 13-35 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER EFFICIENCY	38	39	25	38	55		
I 600 13-36 DO YOU USE TEST TUBE CHECKERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	59	61	45	63	65		
I 601 13-37 DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	45	46	35	45	45		
I 602 13-38 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	56	57	50	59	55		
I 603 13-39 DO YOU USE CHARACTERISTIC CURVES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	20	20	15	21	15		
I 604 13-40 DO YOU CALCULATE ANY ELECTRON TUBE CAPACITANCES SUCH AS INPUT CAPACITANCE	11	11	10	13	5		
I 605 13-41 DO YOU USE OR REFER TO TUBE SOCKET NOTATION	79	79	75	78	80		
I 606 13-42 DO YOU USE OR REFER TO PIN NUMBERING SYSTEMS	83	84	75	85	85		
I 607 13-43 DO YOU USE OR REFER TO THE TYPE OF MATERIAL OR THE OPERATING TEMPERATURE OF THE EMITTING SURFACE IN THE ELECTRON TUBES YOU WORK ON	17	16	25	18	10		
I 608 13-44 DO YOU USE OR REFER TO TUBE SUBSTITUTION MATERIAL SUCH AS MANUALS OR CHARTS	76	77	70	80	75		
J 609 JI-01 DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS IN YOUR PRESENT JOB	40	40	40	43	40		
J 610 JI-02 DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS	40	40	40	43	40		

ELECTRON TUBE AMPLIFIERS AND CIRCUITS

PCT NAMES RESPONDING *YES* BY SELECTED GROUPS
 TASK GROUP SUMMARY
 PRESENT MEMBERS PERFORMING

CAPSUM / PAGE 24

		SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
DYSSES									
J 611	J 1-03 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	34	36	20	39	25			
J 612	J 1-04 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	61	61	60	66	65			
J 613	J 1-05 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	41	41	35	43	45			
J 614	J 1-06 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	53	54	40	56	55			
J 615	J 1-07 DO YOU TROUBLESHOOT OR REPAIR DON'T KNOW WHICH TYPE OF AMPLIFIER	23	23	25	27	15			
J 616	J 2-01 DO YOU WORK WITH GAS TUBES (NOT CATHODE OR COLD CATHODE)	65	66	50	70	70			
J 617	J 2-02 DO YOU WORK WITH CATHODE-RAY TUBES	86	86	85	88	85	SPECIAL PURPOSE		
J 618	J 2-03 DO YOU USE OR REFER TO THE CHARACTERISTICS OF BEAM POWER TUBES	22	23	10	24	15	ELECTRON TUBES		
J 619	J 2-04 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH BEAM POWER TUBES ARE USED	31	33	15	34	30			
J 620	J 2-05 DO YOU USE OR REFER TO THE CHARACTERISTICS OF THYRATRONS	11	12	0	13	10			
J 621	J 2-06 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH THYRATRONS ARE USED	11	12	0	13	15			
J 622	J 2-07 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTRON GUNS (CATHODE-RAY TUBES (CRT))	62	63	75	86	70			
J 623	J 2-08 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROMAGNETIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)	82	83	75	85	75			
J 624	J 2-09 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)	73	75	60	74	75			
J 625	J 2-10 DO YOU USE OR REFER TO PHOSPHOR SCREENS	77	78	65	82	70			
J 626	J 2-11 DO YOU USE OR REFER TO ALUMINUM COATINGS	76	77	65	80	70			
J 627	J 2-12 DO YOU USE OR REFER TO ELECTRON OPTICS	45	46	35	48	45			
J 628	J 2-13 DO YOU USE OR REFER TO PERSISTENCE	48	48	50	50	45			
J 629	J 2-14 DO YOU USE OR REFER TO DECAY TIMES	37	38	30	39	30			
J 630	J 2-15 DO YOU USE OR REFER TO FLUORESCENCE	49	51	30	53	45			
J 631	J 2-16 DO YOU USE OR REFER TO PHOSPHORESCENCE	56	58	40	60	50			
J 632	J 3-01 DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	44	44	50	50	50			
J 633	J 3-02 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	33	32	40	26	40			
J 634	J 3-03 DO YOU PERFORM TASKS ON FREQUENCY MIXERS	33	33	40	28	35	HETERODYNING, AND		
J 635	J 3-04 DO YOU USE OR REFER TO THE HETERODYNING OF SIGNALS IN YOUR WORK WITH TRANSMIT OR RECEIVE SYSTEMS	34	34	40	29	35	MODULATION, AND DEMODULATION		
J 636	J 3-05 DO YOU PERFORM TASKS ON REACALANCE MODULATORS	18	18	20	15	25			
J 637	J 3-06 DO YOU PERFORM TASKS ON MODULATED OSCILLATORS	27	26	40	22	25			
K 638	K 1-01 DO YOU WORK ON AM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	34	35	30	33	30			
K 639	K 1-02 DO YOU INSPECT AM TRANSMIT OR RECEIVE SYSTEMS	33	33	30	30	25			
K 640	K 1-03 DO YOU CLEAN AM TRANSMIT OR RECEIVE SYSTEMS	30	31	30	30	25			
K 641	K 1-04 DO YOU ALIGN OR ADJUST AM TRANSMIT OR RECEIVE SYSTEMS	32	32	30	30	25	AM SYSTEMS		

PLT HRS. RESPONDING *YES* BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

APSUMM PAGE 24

DR-TSK SPC SPC SPC SPC SPC
151 152 153 154 155

DR-TSK	SPC 151	SPC 152	SPC 153	SPC 154	SPC 155
K 642 K-105 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE SYSTEMS	32	32	30	29	25
K 643 K-106 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE SYSTEMS	32	32	30	30	25
K 644 K-107 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE SYSTEMS	27	27	30	26	25
K 645 K-108 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE COMPONENTS	30	30	30	29	25
K 646 K-109 DO YOU PERFORM TASKS ON HF OSCILLATORS	32	33	25	29	30
K 647 K-110 DO YOU PERFORM TASKS ON HF AMPLIFIERS	33	34	25	30	30
K 648 K-111 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	36	36	30	34	30
K 649 K-112 DO YOU PERFORM TASKS ON POWER AMPLIFIERS	32	32	30	30	25
K 650 K-113 DO YOU PERFORM TASKS ON LOCAL OSCILLATORS	34	34	30	32	30
K 651 K-114 DO YOU PERFORM TASKS ON LF AMPLIFIERS	33	33	30	30	30
K 652 K-115 DO YOU PERFORM TASKS ON DETECTORS	33	33	30	30	30
K 653 K-116 DO YOU PERFORM TASKS ON DONT REMEMBER WHICH AM STAGE	6	7	5	7	0
K 654 K-117 DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN TRANSMITTERS	16	16	10	16	15
K 655 K-118 DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN TRANSMITTERS	16	16	15	16	15
K 656 K-119 DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS	28	29	20	26	25
K 657 K-120 DO YOU USE OR REFER TO SELECTIVITY OF RECEIVERS	29	30	20	26	25
K 658 K-121 DO YOU USE OR REFER TO 2ND HARMONIC DISTORTION	16	16	15	14	20
K 659 K-122 DO YOU USE OR REFER TO BANDPASS DISTORTION	25	25	20	22	20
K 660 K-123 DO YOU USE OR REFER TO SQUARE LAW DISTORTION	9	9	0	8	15
K 661 K-124 DO YOU USE OR REFER TO CO-CHANNEL INTERFERENCE	26	27	15	24	25
K 662 K-125 DO YOU USE OR REFER TO IMAGE FREQUENCIES IN RECEIVERS	24	25	10	25	20
K 663 K-126 DO YOU USE OR REFER TO SIGNAL TO IMAGE RATIOS OR IMAGE REJECTION RATIOS	17	18	5	16	20
K 664 K-127 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM TRANSMITTER SCHEMATIC DIAGRAMS	21	21	20	19	30
K 665 K-128 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM RECEIVER SCHEMATIC DIAGRAMS	33	34	25	31	30
K 666 K-129 DO YOU WORK WITH FM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	33	33	35	32	30
K 667 K-130 DO YOU INSPECT FM TRANSMIT OR RECEIVE SYSTEMS	33	33	35	32	30
K 668 K-131 DO YOU CLEAN FM TRANSMIT OR RECEIVE SYSTEMS	32	32	35	32	30
K 669 K-132 DO YOU ALIGN FM TRANSMIT OR RECEIVE SYSTEMS	31	31	35	30	30
K 670 K-133 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE SYSTEMS	32	31	35	30	30
K 671 K-134 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE COMPONENTS	32	31	35	31	25
K 672 K-135 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE SYSTEMS	24	23	30	24	25
K 673 K-136 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE COMPONENTS	30	30	35	30	25
K 674 K-137 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	34	34	35	32	30
K 675 K-138 DO YOU PERFORM TASKS ON FREQUENCY MULTIPLIERS	27	26	30	26	25

PCT MARKS RESPONDING YES, BY SELECTED GROUPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

GPSUM7 PAGE 25

Q-Y-TSK	SPC	SPC	SPC	SPC	SPC	SPC	SPC
K 676 K2=11 DO YOU PERFORM TASKS ON DRIVERS (INTERMEDIATE AMPLIFIERS)	31	31	35	29	25		
K 677 K2=12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS	30	29	35	27	25		
K 678 K2=13 DO YOU PERFORM TASKS ON RF AMPLIFIERS	30	31	30	28	30		
K 679 K2=14 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	30	29	35	26	25		
K 680 K2=15 DO YOU PERFORM TASKS ON IF AMPLIFIERS	32	32	35	30	30		
K 681 K2=16 DO YOU PERFORM TASKS ON LIMITERS	31	31	35	29	25		
K 682 K2=17 DO YOU PERFORM TASKS ON FREQUENCY DISCRIMINATORS	30	31	30	28	25		
K 683 K2=18 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSMITTERS	20	19	25	18	25		
K 684 K2=19 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM RECEIVERS	32	31	35	30	25		
K 685 K3=01 DO YOU CONVERT DECIMAL (BASE 10) NUMBERS TO OCTAL (BASE 8) NUMBERS	10	10	5	11	5		
X 686 K3=02 DO YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2) NUMBERS	16	16	10	16	5	NUMBERING SYSTEMS	
K 687 K3=03 DO YOU CONVERT OCTAL NUMBERS TO DECIMAL NUMBERS	8	8	5	7	5		
K 688 K3=04 DO YOU CONVERT OCTAL NUMBERS TO BINARY NUMBERS	7	7	5	6	5		
K 689 K3=05 DO YOU CONVERT BINARY NUMBERS TO DECIMAL NUMBERS	12	12	10	11	5		
K 690 K3=06 DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS	7	7	5	6	5		
X 691 K3=07 DO YOU ADD BINARY NUMBERS TO GET A SUM	12	12	15	11	5		
K 692 K3=08 DO YOU SUBTRACT BINARY NUMBERS USING THE END-AROUND- CARRY METHOD	9	10	5	10	5		
X 693 K3=09 DO YOU SUBTRACT BINARY NUMBERS USING THE DIRECT SUBTRACTION METHOD	11	12	0	13	5		
X 694 K3=10 DO YOU ADD OCTAL NUMBERS TO GET A SUM	8	8	5	9	5		
L 695 L1=01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO LOGIC FUNCTIONS	29	27	45	26	30		
L 696 L1=02 DO YOU CONSTRUCT TRUTH TABLES FOR AND LOGIC SYMBOLS	18	17	25	16	10		
L 697 L1=03 DO YOU CONSTRUCT TRUTH TABLES FOR OR LOGIC SYMBOLS	17	16	20	16	10	LOGIC FUNCTIONS	
L 698 L1=04 DO YOU CONSTRUCT TRUTH TABLES FOR AND OR LOGIC SYMBOLS WITH STATE INDICATORS	17	16	25	15	10		
L 699 L1=05 DO YOU CONSTRUCT TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS OR GATES	16	16	20	16	5		
L 700 L1=06 DO YOU USE OR REFER TO TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES	21	20	25	18	20		
L 701 L1=07 DO YOU USE OR REFER TO TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES	20	20	20	18	20		
L 702 L1=08 DO YOU USE OR REFER TO TRUTH TABLES FOR AND OR LOGIC SYMBOLS WITH STATE INDICATIONS	21	20	25	16	20		
L 703 L1=09 DO YOU USE OR REFER TO TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS	21	20	18	20			
L 704 L1=10 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR AND GATES	27	27	35	24	25		
L 705 L1=11 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR OR GATES	27	26	30	24	25		
L 706 L1=12 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR HAND OR NOH GATES	27	30	25	25			

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DR-TSK	SPC 151	SPC 152	SPC 153	SPC 154	SPC 155
L 707 L-13 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR EXCLUSIVE OR GATES IN YOUR PRESENT JOB? DO YOU PERFORM ANY TASKS RELATING TO BOOLEAN EQUATIONS, LOGIC DIAGRAMS, OR LOGIC CIRCUITS	18	19	5	16	20
L 709 L-02 DO YOU DRAW LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUITS	9	10	0	9	5
L 710 L-03 DO YOU CONSTRUCT TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS	8	9	0	4	5
L 711 L-04 DO YOU DRAW LOGIC DIAGRAMS FROM GIVEN BOOLEAN EQUATIONS	7	8	0	8	5
L 712 L-05 DO YOU MEASURE INPUTS OR OUTPUTS OF LOGIC GATES	16	16	10	16	10
L 713 L-06 DO YOU DEVELOP OR ANALYZE BOOLEAN EQUATIONS IN THE PROCESS OF TROUBLESHOOTING DIGITAL CIRCUITS	8	9	0	9	5
L 714 L-07 DO YOU ANALYZE LOGIC CIRCUITS BY USING BOOLEAN ALGEBRA	9	9	0	9	5
L 715 L-08 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUIT GATES	15	16	0	15	5
L 716 L-09 DO YOU USE OR REFER TO TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS	10	11	0	10	5
L 717 L-10 DO YOU USE OR REFER TO LOGIC DIAGRAMS CONSISTING OF MORE THAN ONE GATE	17	18	0	16	10
L 718 L-11 DO YOU COMPUTE SUM AND CARRY EXPRESSIONS FOR SERIAL HALF OR FULL ADDER LOGIC DIAGRAMS	7	8	0	7	5
L 719 L-12 DO YOU TRACE DATA FLOW THROUGH PARALLEL FULL ADDER LOGIC DIAGRAMS	12	13	0	11	10
L 720 L-13 DO YOU WORK WITH ASTABLE (FREE RUNNING) MULTIVIBRATORS	20	21	5	20	20
L 721 L-14 DO YOU WORK WITH BISTABLE (FLIP-FLOP) MULTIVIBRATORS	19	21	5	18	20
L 722 L-15 DO YOU WORK WITH MONOSTABLE (ONE-SHOT) MULTIVIBRATORS	20	21	5	20	20
L 723 L-16 DO YOU USE OR REFER TO FLIP-FLOP MULTIVIBRATOR SYMBOLS	20	21	5	19	20
L 724 L-17 DO YOU USE OR PREFER TO SINGLE-SHOT MULTIVIBRATOR SYMBOLS	20	21	5	20	20
L 725 L-18 DO YOU USE OR REFER TO FLIP-FLOP CIRCUIT DIAGRAMS	19	21	5	18	20
L 726 L-19 DO YOU USE OR REFER TO FLIP-FLOP TRUTH TABLES	16	17	5	14	15
L 727 L-20 DO YOU USE OR REFER TO COMPLEMENTED FLIP-FLOP LOGIC SYMBOLS	17	18	5	17	10
L 728 L-21 DO YOU USE OR REFER TO COMPLEMENTING FLIP-FLOP LOGIC SYMBOLS	17	18	5	17	10
L 729 L-22 DO YOU MEASURE OUTPUT WAVESHAPE OF LOGIC CIRCUITS	17	18	5	16	20
L 730 L-23 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTED FLIP-FLOP SCHEMATIC DIAGRAMS	16	17	5	15	20
L 731 L-24 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTING FLIP-FLOP SCHEMATIC DIAGRAMS	15	16	5	14	20
L 732 L-25 DO YOU CONSTRUCT TRUTH TABLES FOR JK FLIP-FLOP LOGIC SYMBOLS	12	13	0	12	10

	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
L 733 L-01	DO YOU WORK WITH DIGITAL COUNTERS IN YOUR PRESENT JOB	28	28	30	25	30			
L 734 L-02	DO YOU USE OR REFER TO UP-COUNTERS	21	21	20	19	10			
L 735 L-03	DO YOU USE OR REFER TO DOWN-COUNTERS	27	27	25	24	25			
L 736 L-04	DO YOU USE OR REFER TO SERIAL COUNTERS	19	20	15	17	10	COUNTERS		
L 737 L-05	DO YOU USE OR REFER TO PARALLEL COUNTERS	15	16	10	13	10			
L 738 L-06	DO YOU USE OR REFER TO RING COUNTERS	14	14	10	13	5			
L 739 L-07	DO YOU USE OR REFER TO DECADE COUNTERS	18	18	15	16	15			
L 740 L-08	DO YOU USE OR REFER TO COUNT DETECT CIRCUITS	18	18	15	16	10			
L 741 L-09	DO YOU USE OR REFER TO DOWN CLOCKS	19	20	15	16	10			
L 742 L-10	DO YOU USE OR REFER TO UP CLOCKS	18	19	15	16	10			
L 743 L-11	DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	18	18	15	16	10			
L 744 L-12	DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-FLOPS	20	20	20	18	15			
L 745 L-13	DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF DECADE COUNTERS	15	16	10	16	10			
L 746 L-14	DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF RING COUNTERS	—	12	13	10	12	5		
L 747 L-15	DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER	14	15	10	13	5			
L 748 L-16	DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	14	15	10	13	5			
L 749 L-17	DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF COUNTERS	15	16	0	16	5			
L 750 L-18	DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	13	13	10	11	5			
L 751 L-19	DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-FLOPS	12	13	5	11	5			
L 752 L-20	DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTERS	10	11	5	9	5			
L 753 L-21	DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR OTHER TYPES OF COUNTERS	11	12	0	11	5			
L 754 L-22	DO YOU CONSTRUCT TRUTH TABLES FROM LOGIC DIAGRAMS OF DECADE COUNTERS	8	9	0	9	5			
L 755 L-23	DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP IN KING COUNTERS FOR SPECIFIC INPUT PULSES	12	13	5	13	5			
L 756 L-24	DO YOU DETERMINE THE APPROPRIATE AND GATE NECESSARY IN COUNT DETECT CIRCUITS TO INDICATE A REQUIRED COUNT	14	14	10	13	5			
M 757 M-01	DO YOU WORK WITH SAWTOOTH WAVE GENERATORS	76	75	85	75	80			
M 758 M-02	DO YOU WORK WITH TRAPEZOIDAL WAVE GENERATORS	63	62	65	65	60			
M 759 M-03	DO YOU WORK WITH PULSED OSCILLATORS WITH REGENERATIVE FEEDBACK	60	59	70	60	55			
M 760 M-04	DO YOU WORK WITH PULSED OSCILLATORS WITHOUT HARMONIC FEEDBACK	51	51	55	51	40	TIMING C		

PLT MARS RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY
PRESENT MEMBERS PERFORMING

TYPE-TASK	SPC 151	SPC 152	SPC 153	SPC 154	SPC 155
M 701 M-05 DO YOU WORK WITH BLOCKING OSCILLATORS	61	65	65	68	65
M 762 M-06 DO YOU USE OR REFER TO RISE TIME	62	62	65	63	65
M 763 M-07 DO YOU USE OR REFER TO FALL OR FLYBACK TIME	67	66	75	69	75
M 764 M-08 DO YOU USE OR REFER TO SWEEP TIME	71	71	75	72	80
M 765 M-09 DO YOU USE OR REFER TO ELECTRICAL LENGTH OF SAWTOOTH	58	59	45	58	65
WAVEFORMS					
M 766 M-10 DO YOU USE OR REFER TO PHYSICAL LENGTH OF SAWTOOTH	56	58	35	55	65
M 767 M-11 DO YOU USE OR REFER TO LINEAR SLOPE OF SAWTOOTH	61	63	40	63	75
M 768 M-12 DO YOU USE OR REFER TO GATE LENGTH OF SAWTOOTH	41	43	15	41	45
WAVEFORMS					
M 769 M-201 DO YOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB	75	74	80	72	75
M 770 M-202 DO YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL GENERATORS	75	74	80	72	75
M 771 M-203 DO YOU PERFORM PERIODIC MAINTENANCE SUCH AS ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL GENERATORS	62	63	50	63	65
M 772 M-204 DO YOU TROUBLESHOOT TO AN ASSEMBLY OR SUBASSEMBLY WHILE USING SIGNAL GENERATORS	58	59	55	57	75
M 773 M-205 DO YOU TROUBLESHOOT TO THE SMALLEST REPLACEABLE COMPONENT WHILE USING SIGNAL GENERATORS	55	55	55	53	70
M 774 M-206 DO YOU USE AUDIO SINUSOIDAL WAVE GENERATORS SUCH AS SQUARE WAVE, TRIANGLE, PULSE, OR SPIKE	67	65	80	61	65
M 775 M-207 DO YOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH AS SAWTOOTH, RF, GENERATORS LESS THAN 1,000 MHZ	36	37	25	38	35
M 776 M-208 DO YOU USE RF GENERATORS LESS THAN 1,000 MHZ	36	37	30	34	40
M 777 M-209 DO YOU USE RF GENERATORS GREATER THAN 1,000 MHZ	27	28	10	30	15
M 778 M-210 DO YOU USE OTHER SPECIAL PURPOSE OR MULTI-FUNCTION GENERATORS	58	58	55	59	55
M 779 M-211 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS OR GENERATORS	45	43	65	38	45
M 780 M-02 DO YOU INSPECT MOTORS	44	43	60	39	45
M 781 M-03 DO YOU CLEAN OR LUBRICATE MOTORS	44	43	60	39	45
M 782 M-04 DO YOU OPERATE MOTORS	41	40	55	36	45
M 783 M-05 DO YOU REMOVE OR REPLACE COMPLETE MOTORS	43	42	60	38	45
M 784 M-06 DO YOU REMOVE OR REPLACE MOTOR PARTS	27	27	30	24	40
M 785 M-07 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF MOTORS	43	42	60	38	45
M 786 M-08 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS	28	28	30	25	40
M 787 M-09 DO YOU PERFORM ANY TASKS ON FIELD COILS	15	15	15	5	5
M 788 M-10 DO YOU PERFORM ANY TASKS ON ARMATURES	19	19	20	18	10
M 789 M-11 DO YOU PERFORM ANY TASKS ON ROTORS	20	19	25	20	10
M 790 M-12 DO YOU PERFORM ANY TASKS ON BRUSHES	30	30	35	28	30
M 791 M-13 DO YOU PERFORM ANY TASKS ON SLIP RINGS	24	24	23	25	25
M 792 M-14 DO YOU PERFORM ANY TASKS ON COMMUTATORS	20	20	18	25	25
M 793 M-15 DO YOU PERFORM ANY TASKS ON POLE PIECES	15	15	10	14	10

USE OF SIGNAL GENERATORS

MOTORS AND GENERATORS

PCT MEMS RESPONDING YES, BY SELECTED GRPS

1) TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

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	DY-TSK	SPC 151	SPC 152	SPC 153	SPC 154	SPC 155
N 025 N-2-UU DO YOU USE OR REFER TO HYSTERESIS CURVES OR LOOPS	5	5	0	3	0	0
N 026 N-2-U9 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT	4	4	5	3	0	0
WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF						
SINGLE WINDING SATURABLE REACTORS						
N 027 N-2-10 DO YOU MEASURE OUTPUT WAVEFORMS ACROSS REACTOR	5	5	5	5	0	0
WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE						
REACTORS						
N 028 N-2-11 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT	4	4	5	3	0	0
WAVEFORMS FOR MAGNETIC AMPLIFIERS						
N 029 N-2-12 DO YOU USE OR REFER TO COERCIVE FORCE IN SATURABLE	3	3	0	2	0	0
REACTORS						
N 030 N-2-13 DO YOU USE OR REFER TO RESIDUAL MAGNETISM IN	3	4	0	2	0	0
SATURABLE REACTORS						
N 031 N-2-14 DO YOU USE OR REFER TO FLUX DENSITY IN SATURABLE	3	4	0	2	0	0
REACTORS						
N 032 N-2-15 DO YOU USE OR REFER TO POINT OF SATURATION IN	3	4	0	2	0	0
SATURABLE REACTORS						
1. 033 N-2-16 DO YOU USE OR REFER TO SATURABLE REACTOR SCHEMATIC	3	4	0	2	0	0
SYMBOLS						
N 034 N-3-01 DO YOU WORK WITH WAVESHAPE CIRCUITS IN YOUR PRESENT	70	69	80	66	75	
JOB						
N 035 N-3-02 DO YOU USE OR REFER TO TRANSIENT INTERVALS	40	42	20	45	30	WAVESHAPE
N 036 N-3-03 DO YOU USE OR REFER TO PULSE WIDTH (PW)	66	65	75	63	70	CIRCUITS
N 037 N-3-04 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)	47	48	40	45	55	
N 038 N-3-05 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY	51	52	45	49	65	
(PRF)						
N 039 N-3-06 DO YOU USE OR REFER TO DIFFERENTIATING CIRCUITS	66	66	70	63	65	
N 040 N-3-07 DO YOU USE OR REFER TO INTEGRATING CIRCUITS	68	67	80	64	65	
N 041 N-3-08 DO YOU USE OR REFER TO THE CLASSIFICATION OF TIME	46	47	35	47	35	
CONSTANTS (TC) AS LONG, MEDIUM, OR SHORT						
N 042 N-3-09 DO YOU DETERMINE WHETHER AN LR OR MC CIRCUIT IS	36	38	25	36	30	
DIFFERENTIATING OR INTEGRATING BASED ON THE TIME CONSTANT						
AND OUTPUT CONFIGURATION						
N 043 N-3-10 DO YOU WORK WITH SQUARE WAVE GENERATORS	55	56	35	54	65	
N 044 N-3-11 DO YOU WORK WITH RECTANGULAR WAVE GENERATORS	39	40	25	38	35	
O 0845 O-1-01 DO YOU WORK ON SINGLE SIDEBAND SYSTEMS IN YOUR	6	8	0	9	10	
PRESNT JOB						
O 0846 O-1-02 DO YOU INSPECT SSB TRANSMIT OR RECEIVE SYSTEMS	6	7	0	6	0	
O 0847 O-1-03 DO YOU CLEAN SSB TRANSMIT OR RECEIVE SYSTEMS	6	6	0	7	0	SINGLE SIDEBAND
O 0848 O-1-04 DO YOU ALIGN SSB TRANSMIT OR RECEIVE SYSTEMS	6	6	0	7	0	
O 0849 O-1-05 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE	6	6	0	7	0	SYSTEMS
SYSTEMS						
O 0850 O-1-06 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE	6	7	0	6	0	
COMPONENTS						
O 0851 O-1-07 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE	6	6	0	7	0	
SYSTEMS						
O 0852 O-1-08 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE	6	7	0	4	0	
COMPONENTS						

PCY WORKS RESPONDING 'YES' BY SELECTED GROUPS
TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

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	DY-TSK	SPC 151	SPC 152	SPC 153	SPC 154	SPC 155
0 453 01-19 DO YOU PERFORM TASKS ON SSB AUDIO AMPLIFIERS	7	8	0	9	0	0
0 454 01-20 DO YOU PERFORM TASKS ON SSB BALANCED MODULATORS	6	7	0	8	0	0
0 455 01-21 DO YOU PERFORM TASKS ON SSB CARRIER OSCILLATORS	6	7	0	8	0	0
0 456 01-22 DO YOU PERFORM TASKS ON SSB LC FILTERS	6	7	0	9	0	0
0 457 01-13 DO YOU PERFORM TASKS ON SSB CRYSTAL FILTERS	6	7	0	9	0	0
0 458 01-14 DO YOU PERFORM TASKS ON SSB MECHANICAL FILTERS	6	7	0	8	0	0
0 459 01-15 DO YOU PERFORM TASKS ON SSB OSCILLATORS	7	8	0	9	0	0
0 460 01-16 DO YOU PERFORM TASKS ON SSB MIXERS	7	8	0	9	0	0
0 461 01-17 DO YOU PERFORM TASKS ON SSB DRIVERS	6	7	0	9	0	0
0 462 01-18 DO YOU PERFORM TASKS ON SSB POWER AMPLIFIERS	6	7	0	9	0	0
0 463 01-19 DO YOU PERFORM TASKS ON SSB HF AMPLIFIERS	6	7	0	9	0	0
0 464 01-20 DO YOU PERFORM TASKS ON SSB FREQUENCY CONVERTERS	6	7	0	8	0	0
0 465 01-21 DO YOU PERFORM TASKS ON SSB IF AMPLIFIERS	6	7	0	9	0	0
0 466 01-22 DO YOU PERFORM TASKS ON SSB DEMODULATORS	6	7	0	9	0	0
0 467 01-23 DO YOU PERFORM TASKS ON SSB DON'T REMEMBER WHICH SSB SYSTEM STAGES	4	0	5	0	0	0
0 468 01-24 DO YOU USE OR REFER TO SELECTIVE FADING	4	5	0	5	0	0
0 469 01-25 DO YOU USE OR REFER TO PEAK POWER	6	7	0	8	0	0
0 470 01-26 DO YOU USE OR REFER TO FREQUENCY STABILITY	6	7	0	7	0	0
0 471 01-27 DO YOU USE OR REFER TO RESPONSE CURVES FOR BANDWIDTH FILTERS	6	7	0	7	0	0
0 472 01-28 DO YOU CALCULATE PEAK POWER OR EFFECTIVE POWER OF SSB TRANSMITTERS	5	6	0	7	0	0
0 473 01-29 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB TRANSMITTER SCHEMATIC DIAGRAMS	6	6	0	7	0	0
0 474 01-30 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB RECEIVER SCHEMATIC DIAGRAMS	6	7	0	8	0	0
0 475 02-01 DO YOU WORK ON PULSE MODULATION SYSTEMS IN YOUR PRESENT JOB	15	15	10	14	10	0
0 476 02-02 DO YOU INSPECT PULSE MODULATION SYSTEMS	13	14	10	14	10	0
0 477 02-03 DO YOU CLEAN PULSE MODULATION SYSTEMS	12	13	10	14	10	PULSE MODULATION SYSTEMS
0 478 02-04 DO YOU ALIGN PULSE MODULATION SYSTEMS	12	12	10	14	10	12
0 479 02-05 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS	13	14	10	14	10	14
0 480 02-06 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEM COMPONENTS	12	13	10	13	10	13
0 481 02-07 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS	12	12	10	13	10	10
0 482 02-08 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEM COMPONENTS	12	13	10	13	10	12
0 483 02-09 DO YOU WORK ON PULSE-AMPLITUDE MODULATION (PAM)	10	10	10	10	5	5
0 484 02-10 DO YOU WORK ON PULSE-DURATION MODULATION (PDM)	9	9	10	7	5	5
0 485 02-11 DO YOU WORK ON PULSE-POSITION MODULATION (PPM)	8	8	5	7	5	5
0 486 02-12 DO YOU WORK ON PULSE-CODE MODULATION (PCM) SYSTEMS	5	5	0	5	5	5
0 487 02-13 DO YOU WORK ON LINE PULSING MODULATION SYSTEMS	5	6	0	6	5	5
0 488 02-14 DO YOU WORK ON DON'T REMEMBER WHICH TYPE OF MODULATION SYSTEM	6	4	0	6	10	0

PCT MARS RESPONDING "YES" BY SELECTED QMPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DR-TSK	SPC 151	SPC 152	SPC 153	SPC 154	SPC 155
)	U 889 02-15 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER SUPPLIES	12	13	10	13	10
)	U 890 02-16 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM CHARGING CHOKES AND CHARGING DIODES	7	8	5	8	5
)	U 891 02-17 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE FORMING NETWORKS	13	14	10	14	5
)	U 892 02-18 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TIMERS	10	10	10	11	5
)	U 893 02-19 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM SWITCHES SUCH AS GAS THYRATRONS	4	5	0	5	5
)	U 894 02-20 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE TRANSFORMERS	8	8	10	7	5
)	U 895 02-21 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TRANSMITTER TUBES	7	7	10	7	5
)	U 896 02-22 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM RF AMPLIFIERS	11	11	10	12	5
)	U 897 02-23 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM FREQUENCY CONVERTERS	10	10	10	11	5
)	U 898 02-24 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM IF AMPLIFIERS	12	13	10	13	5
)	U 899 02-25 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DETECTORS	3	3	0	4	5
)	C 900 02-26 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM VIDEO AMPLIFIERS	14	15	10	14	10
)	U 901 02-27 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER VIDEO AMPLIFIERS	11	11	10	12	5
)	U 902 02-28 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DON'T REMEMBER WHICH PULSE MODULATION SYSTEM STAGES	3	3	0	13	10
)	U 903 02-29 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)	10	11	0	9	10
)	U 904 02-30 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT) 02-31 DO YOU USE OR REFER TO PULSE WIDTH (PW)	10	11	0	9	10
)	U 905 02-32 DO YOU USE OR REFER TO PULSE SHAPE	13	14	10	12	10
)	U 906 02-33 DO YOU USE OR REFER TO PEAK POWER	13	14	10	13	10
)	U 907 02-34 DO YOU USE OR REFER TO AVERAGE POWER	11	11	10	11	5
)	U 908 02-35 DO YOU CALCULATE PULSE RECURRENCE TIME (PRT) ON PULSE RECURRENCE FREQUENCY (PRF)	12	12	10	11	5
)	U 909 02-36 DO YOU MEASURE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)	6	7	0	7	0
)	U 910 02-37 DO YOU USE FORMULAS TO CALCULATE AVERAGE POWER OR PEAK POWER OF PULSE MODULATION TRANSMIT SYSTEMS	8	9	0	8	5
)	U 912 02-38 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION TRANSMITTER SCHEMATIC DIAGRAMS	9	9	10	9	10
)	U 913 02-39 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION RECEIVER SCHEMATIC DIAGRAMS	12	13	10	13	5
)	U 914 02-40 DO YOU WORK WITH ANTENNAS IN YOUR PRESENT JOB 02-42 DO YOU INSPECT ANTENNAS	21	19	35	15	20
)	U 915 02-42 DO YOU INSPECT ANTENNAS	18	16	30	14	20
	ANTENNAS					

PC1 MARKS RESPONDING *YES* BY SELECTED GRPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

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	DYS-15K				SPC				SPC				SPC			
	151	152	153	154	155	151	152	153	154	155	151	152	153	154	155	151
0 216 03-03 DO YOU CLEAN ANTENNAS	15	14	25	11	20	15	15	25	13	20	15	15	25	13	20	15
C 917 03-04 DO YOU PHYSICALLY ALIGN ANTENNAS	15	15	25	11	20	12	11	25	9	20	16	15	30	12	20	16
C 918 03-05 DO YOU ELECTRICALLY ALIGN ANTENNAS	15	15	25	11	20	10	10	10	9	20	15	14	25	11	20	15
C 919 03-06 DO YOU TROUBLESHOOT TO ANTENNA COMPONENTS	15	15	25	11	20	10	10	10	9	20	10	10	15	11	20	10
0 920 03-07 DO YOU REMOVE OR INSTALL ANTENNAS	15	15	25	11	20	10	10	10	8	20	10	10	15	8	20	10
0 921 03-08 DO YOU REMOVE OR REPLACE COMPONENTS OF ANTENNAS	15	15	25	11	20	10	10	10	6	10	10	6	10	6	10	6
0 922 03-09 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF E OR ELECTRIC FIELD LINES	15	15	25	11	20	10	10	10	7	10	10	8	10	7	10	8
0 923 03-10 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF H OR MAGNETIC FIELD LINES	15	15	25	11	20	10	10	10	6	5	10	8	10	7	10	8
0 924 03-11 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF M OR MAGNETIC FIELD LINES	15	15	25	11	20	10	10	10	6	5	10	8	10	7	10	8
0 925 03-12 DO YOU DETERMINE THE DIRECTION OF THE MAGNETIC LINES IN RELATION TO THE ELECTRIC LINES OF FORCE FOR ANTENNAS	15	15	25	11	20	10	10	10	6	5	10	8	10	7	10	8
C 926 03-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE LONGER THAN A HALF-WAVE ACT AS INDUCTIVE LOADS	15	15	25	11	20	10	10	10	7	10	10	8	10	7	10	8
0 927 03-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE LONGER THAN A HALF-WAVE ACT AS CAPACITIVE LOADS	15	15	25	11	20	10	10	10	7	10	10	8	10	7	10	8
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	15	15	25	11	20	10	10	10	9	10	10	8	10	9	10	8
0 929 03-16 DO YOU WORK WITH HERTZ ANTENNAS	10	9	15	9	15	8	8	8	5	15	6	6	15	5	15	6
C 930 03-17 DO YOU WORK WITH MARCONI ANTENNAS	10	9	15	9	15	8	8	8	5	15	6	6	15	5	15	6
0 931 03-18 DO YOU WORK WITH BROADSIDE ARRAYS	10	9	15	9	15	8	8	8	5	15	6	6	15	5	15	6
0 932 03-19 DO YOU WORK WITH END-FIRE ARRAYS	10	9	15	9	15	8	8	8	5	15	6	6	15	5	15	6
0 933 03-20 DO YOU WORK WITH CARDIOD ARRAYS	10	9	15	9	15	8	8	8	5	15	6	6	15	5	15	6
0 934 03-21 DO YOU WORK WITH COLLINEAR ARRAYS	10	9	15	9	15	8	8	8	5	15	6	6	15	5	15	6
0 935 03-22 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC INDUCTION FIELDS WHEN WORKING WITH ANTENNAS	9	9	15	9	15	8	8	8	5	15	6	6	15	5	15	6
0 936 03-23 DO YOU MEASURE ELECTROMAGNETIC INDUCTION FIELDS OF ANTENNAS	6	6	15	6	15	8	8	8	5	15	6	6	15	5	15	6
0 937 03-24 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC RADIATION FIELDS WHEN WORKING WITH ANTENNAS	6	6	15	6	15	8	8	8	5	15	6	6	15	5	15	6
0 938 03-25 DO YOU MEASURE ELECTROMAGNETIC RADIATION FIELDS OF ANTENNAS	6	6	15	6	15	8	8	8	5	15	6	6	15	5	15	6
0 939 03-26 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTEENA RADIATION	6	7	0	6	5	7	0	6	5	5	6	6	0	5	5	6
0 940 03-27 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTEENA INDUCTION FIELD	6	6	0	6	5	7	0	6	5	5	6	6	0	5	5	6
0 941 03-28 ARE ANY OF THE ANTENNAS YOU WORK ON LINEARLY POLARIZED	9	8	15	8	15	8	8	8	5	15	8	8	15	7	5	8
0 942 03-29 ARE ANY OF THE ANTENNAS YOU WORK ON CIRCULARLY POLARIZED	6	6	15	6	15	8	8	8	5	15	6	6	15	5	15	6
0 943 03-30 DO YOU MEASURE OR DETERMINE THE POLARITY OF ANTENNAS	7	7	5	5	5	7	5	5	5	10	6	6	10	5	10	6
0 944 03-31 DO YOU CONSTRUCT OR MAKE THE CALCULATIONS NECESSARY TO CONSTRUCT ANTENNAS OF CORRECT LENGTH FOR SPECIFIC RAYLEIGHINGS	7	7	5	5	5	7	5	5	5	10	6	6	10	5	10	6

PCT MARS RESPONDING 'YES' BY SELECTED GRPS

1) TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DI-TSK SPC SPC SPC SPC SPC
 151 152 153 154 155

)	U 945 OJ-32 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS	10	10	15	8	15
)	U 946 OJ-33 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS DIRECTORS	10	9	15	8	15
)	U 947 OJ-34 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS REFLECTORS	10	10	15	8	15
)	U 948 OJ-35 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN DON'T REMEMBER WHAT KIND OF ELEMENTS	6	6	15	5	0
)	U 949 OJ-36 DO YOU WORK ON UNIDIRECTIONAL ANTENNAS	13	13	15	9	15
)	U 950 OJ-37 DO YOU WORK ON BI-DIRECTIONAL ANTENNAS	11	11	10	11	5
)	U 951 OJ-38 DO YOU WORK ON DON'T REMEMBER THE DIRECTIONALITY	4	3	10	4	0
)	U 952 OJ-39 DO YOU WORK WITH ROTAR ANTENNA ARRAYS	5	6	0	7	5
)	P 953 PI-01 IN YOUR PRESENT JOB DO YOU WORK WITH TRANSMISSION LINES (TRANSMISSION LINES ARE DEFINED TO INCLUDE LEADS BETWEEN RECEIVERS AND ANTENNAS, TELEPHONE LEADS, AS WELL AS HIGH VOLTAGE POWER LINES, ETC. DO NOT CONSIDER WAVEGUIDES AS TRANSMISSION LINES)	52	54	30	55	50
)	P 954 PI-02 DO YOU REFER TO OR USE COPPER LOSS OR IZR LOSS IN TRANSMISSION LINES	12	13	0	14	5
)	P 955 PI-03 DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY CURRENTS IN TRANSMISSION LINES	14	15	10	15	10
)	P 956 PI-04 DO YOU REFER TO OR USE RADIATION LOSS IN TRANSMISSION LINES	21	21	15	21	20
)	P 957 PI-05 DO YOU USE OR REFER TO DIELECTRIC LOSS IN TRANSMISSION LINES	21	22	10	21	20
)	P 958 PI-06 DO YOU USE OR REFER TO LEAKAGE LOSSES IN TRANSMISSION LINES	25	25	20	28	15
)	P 959 PI-07 DO YOU WORK WITH TWISTED PAIR TRANSMISSION LINES	18	17	25	19	15
)	P 960 PI-08 DO YOU WORK WITH TWIN LEAD TRANSMISSION LINES	30	31	25	34	35
)	P 961 PI-09 DO YOU WORK WITH OPEN TWO-WIRE TRANSMISSION LINES	9	9	5	11	10
)	P 962 PI-10 DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION LINES	53	54	35	55	50
)	P 963 PI-11 DO YOU WORK WITH RIGID COAXIAL CABLE TRANSMISSION LINES	18	17	25	20	10
)	P 964 PI-12 DO YOU TROUBLESHOOT TRANSMISSION LINES	44	45	35	49	35
)	P 965 PI-13 DO YOU ANALYZE VOLTAGE OR CURRENT WAVEFORMS IN TRANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION (OPEN, SHORTED, CAPACITIVE, INDUCTIVE)	17	17	15	20	10
)	P 966 PI-14 DO YOU SELECT APPROPRIATE TRANSMISSION LINES TERMINATIONS TO ACHIEVE DESIRED WAVEFORMS	33	33	25	36	35
)	P 967 PI-15 DO YOU USE OR REFER TO SCHEMATIC SYMBOLS FOR LINE TERMINATIONS IN TERMS OF CIRCUIT TERMINATIONS	34	34	30	38	30
)	P 968 PI-16 DO YOU MEASURE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES	16	15	30	15	20
)	P 969 PI-17 DO YOU CALCULATE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES	9	9	15	9	5
)	P 970 PI-18 DO YOU PERFORM THE CALCULATIONS NECESSARY TO DETERMINE THE IMPEDANCE AND LENGTH OF QUARTER - WAVELENGTH MATCHING TRANSFORMERS TO MATCH TRANSMISSION LINES TO LOADS	11	11	10	13	5

PCT MHS RESPONDING YES, BY SELECTED GRPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

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	DY-TSK	SPC							
	PI-19	151	152	153	154	155	156	157	158
P 971 PI-19 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING MATCHING TRANSFORMERS	33	34	25	38	30				
P 972 PI-20 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING DELTA MATCHING	8	8	0	8	5				
P 973 PI-21 DO YOU SELECT THE TYPE OF TRANSMISSION LINE NEEDED FOR PARTICULAR JOBS WITHOUT REFERRING TO TECHNICAL DATA	16	17	5	16	15				
P 974 PI-22 DO YOU USE OR REFER TO THE TERM CHARACTERISTIC IMPEDANCE (Z0) OF TRANSMISSION LINES	36	37	25	38	35				
P 975 PI-23 DO YOU CALCULATE THE CHARACTERISTIC IMPEDANCE (Z0) OF TRANSMISSION LINES	8	8	5	9	5				
P 976 PI-24 DO YOU USE OR REFER TO THE TERM CUTOFF FREQUENCY OF TRANSMISSION LINES	9	9	5	8	10				
P 977 PI-25 DO YOU USE OR REFER TO THE TERM VELOCITY FACTOR (K) OF TRANSMISSION LINES	6	7	0	7	5				
P 978 PI-26 DO YOU COMPUTE THE ELECTRICAL LENGTH OF TRANSMISSION LINES FOR PARTICULAR FREQUENCIES	10	10	10	9	10				
P 979 PI-27 DO YOU CONSTRUCT TRANSMISSION LINES OF PARTICULAR ELECTRICAL LENGTH FOR GIVEN FREQUENCIES	10	11	0	10	10				
P 980 PI-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	12	13	5	13	5				
P 981 PI-29 DO YOU WORK WITH NONRESONANT (FLAT) TRANSMISSION LINES	17	18	5	18	10				
P 982 PI-30 DO YOU WORK WITH RESONANT TRANSMISSION LINES	21	23	5	22	20				
P 983 PI-31 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING STUB MATCHING	11	11	10	12	5				
F 984 P2-01 DO YOU WORK WITH WAVEGUIDES OR CAVITY RESONATORS IN YOUR PRESENT JOB	6	6	10	4	15				
P 985 P2-02 DO YOU INSPECT WAVEGUIDES OR CAVITY RESONATORS	5	4	10	4	15				
P 986 P2-03 DO YOU CLEAN WAVEGUIDES OR CAVITY RESONATORS	5	5	5	5	15				
P 987 P2-04 DO YOU HEED WAVEGUIDES OR CAVITY RESONATORS	3	3	0	3	5				
P 988 P2-05 DO YOU TWIST WAVEGUIDES OR CAVITY RESONATORS	3	3	0	3	5				
P 989 P2-06 DO YOU PRESSURIZE WAVEGUIDES OR CAVITY RESONATORS	4	4	5	4	15				
P 990 P2-07 DO YOU PURGE WAVEGUIDES OR CAVITY RESONATORS	3	4	0	4	10				
P 991 P2-08 DO YOU TROUBLESHOOT WAVEGUIDES OR CAVITY RESONATORS	4	4	5	4	15				
P 992 P2-09 DO YOU REMOVE OR INSTALL COMPLETE WAVEGUIDES	3	3	0	3	10				
P 993 P2-10 DO YOU REMOVE OR INSTALL WAVEGUIDE SECTIONS	3	3	0	3	10				
P 994 P2-11 DO YOU REMOVE OR INSTALL DUMMY LOADS	3	3	5	3	5				
P 995 P2-12 DO YOU REMOVE OR INSTALL F BENDS	3	3	0	3	5				
P 996 P2-13 DO YOU REMOVE OR INSTALL H BENDS	3	0	4	5	5				
P 997 P2-14 DO YOU REMOVE OR INSTALL OTHER BENDS	3	3	0	3	10				
P 998 P2-15 DO YOU REMOVE OR INSTALL CHOKES JOINTS	3	3	0	3	10				
P 999 P2-16 DO YOU REMOVE OR INSTALL ROTATING JOINTS	3	3	0	3	5				
P1000 P2-17 DO YOU REMOVE OR INSTALL DIRECTIONAL COUPLERS	3	3	5	3	5				
P1001 P2-18 DO YOU REMOVE OR INSTALL BI-DIRECTIONAL COUPLERS	3	3	5	3	5				
P1002 P2-19 DO YOU USE OR REFER TO A WALL OF WAVEGUIDES	3	3	5	3	5				

PCL MARKS RESPONDING "YES" BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

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SPC
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SPC
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SPC
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P1U03 P2-2U DO YOU USE OR REFER TO "E" WALL OF WAVEGUIDES	3	3	0	3	5
P1U04 P2-21 DO YOU USE OR REFER TO CUTOFF FREQUENCY OF WAVEGUIDES	4	4	5	4	5
P1U05 P2-22 DO YOU USE OR REFER TO FREQUENCY DETERMINING WALL OF	3	3	0	3	5
WAVEGUIDES					
P1U06 P2-23 DO YOU USE OR REFER TO PUEM=DETERMINING WALL OF	3	3	5	3	5
WAVEGUIDES					
P1U07 P2-24 DO YOU USE OR REFER TO ELECTRIC FIELD BOUNDARY	3	3	0	3	5
CONDITIONS					
P1U08 P2-25 DO YOU USE OR REFER TO MAGNETIC FIELD BOUNDARY	3	3	0	3	5
CONDITIONS					
P1U09 P2-26 DO YOU USE OR REFER TO DUPLEXER FIELD BOUNDARY	3	3	0	3	5
CONDITIONS					
P1U10 P2-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST	3	3	0	3	5
WAVEGUIDES ARE MADE WITH A "B" WALL SIZE OF .7 WAVELENGTHS					
OF THE OPERATING FREQUENCY					
P1U11 P2-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST "A"	2	2	0	2	5
WALLS RANGE FROM .2 TO .5 WAVELENGTHS IN SIZE, WITH .35					
USED AS AN AVERAGE					
P1U12 P2-29 ARE YOU CONCERNED WITH THE MATERIAL (SUCH AS BRASS)	3	3	5	3	5
WHICH WAVEGUIDES ARE MADE OF					
P1U13 P2-30 DO YOU COMPUTE THE LENGTH OF A WAVEGUIDE FOR SPECIFIC	2	2	0	2	5
INSTALLATION					
P1U14 P2-31 DO YOU USE THE RIGHT HAND RULE TO DETERMINE THE	3	3	0	3	5
DIRECTION OF PROPAGATION, DIRECTION OF "E" FIELD, OR					
DIRECTION OF "H" FIELD IN WAVEGUIDES					
P1U15 P2-32 DO YOU USE OR REFER TO THE TIME PHASE OF PEAK "E" OR	3	3	0	3	5
"H" LINES IN WAVEGUIDES					
P1U16 P2-33 DO YOU MEASURE THE TIME PHASE OF "E" OR "H" LINES IN	3	3	0	3	5
WAVEGUIDES					
P1U17 P2-34 DO YOU USE OR REFER TO THE SPACE QUADRATURE OF "E" OR	3	3	0	3	5
"H" LINES IN WAVEGUIDES					
P1U18 P2-35 ARE HIGH POWER PROBES USED ON WAVEGUIDES OR CAVITY	2	2	0	3	5
RESONATORS YOU WORK WITH					
P1U19 P2-36 ARE LOW POWER PROBES USED ON WAVEGUIDES OR CAVITY	3	2	5	3	5
RESONATORS YOU WORK WITH					
P1U20 P2-37 ARE LOOPS USED ON WAVEGUIDES OR CAVITY RESONATORS	3	3	0	3	5
YOU WORK WITH					
P1U21 P2-38 ARE APERTURES (WINDOWS OR IRISES) USED ON WAVEGUIDES	3	3	5	3	5
OR CAVITY RESONATORS YOU WORK WITH					
P1U22 P2-39 ARE DON'T REMEMBER THE KIND OF ENERGY COUPLING USED	1	1	0	1	5
ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH					
P1U23 P2-40 DO YOU DETERMINE WHERE PROBES SHOULD BE MOUNTED IN	2	2	0	2	5
WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO					
TECHNICAL DATA					
P1U24 P2-41 DO YOU DETERMINE THE POSITIONING OF LOOPS IN	2	2	0	2	5
WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO					
TECHNICAL DATA					

PCT MARS RESPONDING 'YES' BY SELECTED GRPS
TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

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DY-TASK	SPC	SPC	SPC	SPC	SPC	SPC	SPC
PIU25 P2-42 DO YOU DETERMINE THE POSITIONING OR SIZE OF APERTURES IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA	2	2	0	2	5		
PIU26 P2-43 ARE CHOKE JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	3	2	5	3	5		
PIU27 P2-44 ARE ROTATING JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	3	0	3	5			
PIU28 P2-45 ARE DON'T REMEMBER THE KIND OF JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	2	5	1	10			
PIU29 P2-46 DO YOU TUNE CAVITY RESONATORS USING CAPACITIVE TUNING	3	2	10	3			
PIU30 P2-47 DO YOU TUNE CAVITY RESONATORS USING INDUCTIVE TUNING	3	3	5	3			
PIU31 P2-48 DO YOU TUNE CAVITY RESONATORS USING VOLUME TUNING	3	0	3	5			
PIU32 P2-49 DO YOU TUNE CAVITY RESONATORS USING DON'T REMEMBER THE METHOD OF TUNING	2	2	0	2			
PIU33 P3-0 DO YOU MEASURE THE FREQUENCY OF SIGNALS IN CAVITY RESONATORS	3	3	5	3			
PIU34 P3-01 IN YOUR PRESENT JOB DO YOU WORK WITH KLYSTRONS, TRAVELING WAVE TUBES (TWT), PARAMETRIC AMPLIFIERS, OR MAGNETRONS	4	5	10	5	10	MICROWAVE AMPLIFIERS AND OSCILLATORS	
PIU35 P3-02 DO YOU USE OR REFER TO INTERELECTRODE CAPACITANCE	4	5	0	5	5		
PIU36 P3-03 DO YOU USE OR REFER TO ELECTRON TRANSIT TIME	4	5	0	5	5		
PIU37 P3-04 DO YOU USE OR REFER TO LEAD INDUCTANCE	4	5	4	5			
PIU38 P3-05 DO YOU USE OR REFER TO RF LOSSES IN EXTERNAL CIRCUITRY	4	5	4	5			
PIU39 P3-06 DO YOU USE OR REFER TO PRINCIPLE OF ELECTRON VELOCITY MODULATION	4	5	5	5			
PIU40 P3-07 DO YOU USE OR REFER TO ELECTRON BUNCHING	4	5	5	5			
PIU41 P3-08 DO YOU WORK WITH TWO-CAVITY KLYSTRONS	3	3	5	3			
PIU42 P3-09 DO YOU WORK WITH THREE-CAVITY KLYSTRONS	3	3	0	4			
PIU43 P3-10 DO YOU WORK WITH RIFLE KLYSTRONS	5	5	5	10			
PIU44 P3-11 DO YOU WORK WITH TRAVELING-WAVE TUBES (TWT)	3	3	0	3			
PIU45 P3-12 DO YOU WORK WITH NONUNIFORMATIVE PARAMETRIC AMPLIFIERS	3	3	0	3			
PIU46 P3-13 DO YOU WORK WITH UP-CONVERTER PARAMETRIC AMPLIFIERS	3	1	0	4			
PIU47 P3-14 DO YOU WORK WITH MAGNETRONS	2	2	0	3			
PIU48 P3-15 DO YOU INSPECT KLYSTRONS OR TWT	5	5	10	5			
PIU49 P3-16 DO YOU CLEAN KLYSTRONS OR TWT	5	5	10	10			
PIU50 P3-17 DO YOU TUNE KLYSTRONS OR TWT ELECTRICALLY	5	4	10	5			
PIU51 P3-18 DO YOU TUNE KLYSTRONS OR TWT MECHANICALLY	5	4	10	5			
PIU52 P3-19 DO YOU PERFORM OPERATIONAL CHECKS OF KLYSTRONS OR TWT	5	4	10	5			
PIU53 P3-20 DO YOU TROUBLESHOOT KLYSTRONS OR TWT	5	5	5	10			
PIU54 P3-21 DO YOU REMOVE OR REPLACE COMPLETE KLYSTRON OR TWT	5	4	10	5			
PIU55 P3-22 DO YOU REMOVE OR REPLACE KLYSTRON OR TWT COMPONENTS	4	3	10	4			
PIU56 P3-23 DO YOU INSPECT PARAMETRIC AMPLIFIERS	3	0	5	5			
PIU57 P3-24 DO YOU CLEAN PARAMETRIC AMPLIFIERS	3	4	0	5			
PIU58 P3-25 DO YOU ADJUST PARAMETRIC AMPLIFIERS	3	4	0	5			

PLT MARS RESPONDING 'YES' BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

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

	SPC 151	SPC 152	SPC 153	SPC 154	SPC 155
P1059 P3-26 DO YOU TUNE PARAMETRIC AMPLIFIERS	3	4	0	5	5
P1060 P3-27 DO YOU PERFORM OPERATIONAL CHECKS OF PARAMETRIC	3	4	0	5	5
AMPLIFIERS					
P1061 P3-28 DO YOU TROUBLESHOOT PARAMETRIC AMPLIFIERS	3	4	0	5	5
P1062 P3-29 DO YOU REMOVE OR REPLACE COMPLETE PARAMETRIC	3	4	0	5	5
AMPLIFIER					
P1063 P3-30 DO YOU REMOVE OR REPLACE PARAMETRIC AMPLIFIER	3	4	0	5	5
COMPONENTS					
P1064 P3-31 DO YOU INSPECT MAGNETRONS	2	2	0	3	5
P1065 P3-32 DO YOU CLEAN MAGNETRONS	2	2	0	3	5
P1066 P3-33 DO YOU ADJUST MAGNETRONS	2	2	0	3	5
P1067 P3-34 DO YOU TUNE MAGNETRONS	2	2	0	3	5
P1068 P3-35 DO YOU PERFORM OPERATIONAL CHECKS OF MAGNETRONS	2	2	0	3	5
P1069 P3-36 DO YOU TROUBLESHOOT MAGNETRONS	2	2	0	3	5
P1070 P3-37 DO YOU REMOVE OR REPLACE COMPLETE MAGNETRON	2	2	0	3	5
P1071 P3-38 DO YOU REMOVE OR REPLACE MAGNETRON COMPONENTS	2	2	0	3	5
P1072 P3-39 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF	3	3	0	3	5
TWO-CAVITY KLYSTONS COLLECTOR PLATES					
P1073 P3-40 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF	3	3	0	3	5
TWO-CAVITY KLYSTONS CATCHER CAVITIES					
P1074 P3-41 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF	3	3	0	3	5
TWO-CAVITY KLYSTONS CATCHER GRIDS					
P1075 P3-42 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF	3	3	0	3	5
TWO-CAVITY KLYSTONS FEEDBACK LOOPS					
P1076 P3-43 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF	3	3	0	3	5
TWO-CAVITY KLYSTONS DRIFT SPACES					
P1077 P3-44 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF	3	3	0	3	5
TWO-CAVITY KLYSTONS BUNCHER GRIDS					
P1078 P3-45 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF	3	3	0	3	5
TWO-CAVITY KLYSTONS BUNCHER CAVITIES					
P1079 P3-46 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF	3	3	0	3	5
TWO-CAVITY KLYSTONS CONTROL GRIDS					
P1080 P3-47 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF	3	3	0	3	5
TWO-CAVITY KLYSTONS CATHODES					
P1081 P3-48 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF	4	4	5	5	5
REFLEX KLYSTRON REPELLER (REFLECTOR) PLATES					
P1082 P3-49 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF	4	4	5	5	5
REFLEX KLYSTRON GRIDS					
P1083 P3-50 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF	4	4	0	5	5
REFLEX KLYSTRON GRID CAVITY GAPS					
P1084 P3-51 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF	4	4	5	5	5
REFLEX KLYSTRON RESONANT CAVITIES					
P1085 P3-52 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF	4	4	5	5	5
REFLEX KLYSTRON MAGNETIC COUPLING LOOPS					
P1086 P3-53 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF	4	4	5	5	5
REFLEX KLYSTRON FILAMENTS					
P1087 P3-54 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF	4	5	5	5	5
REFLEX KLYSTRON CATHODES					

PCT MARS RESPONDING *YES* BY SELECTED GRAPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

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	DY-TSK	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
P1088 P3-55 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON OUTPUT LEADS	4	4	5	5	5				
P1089 P3-56 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES FILAMENT	3	3	0	3	5				
P1090 P3-57 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES CATHODES	3	3	0	3	5				
P1091 P3-58 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MODULATOR GRIDS	3	3	0	3	5				
P1092 P3-59 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ANODES	3	3	0	3	5				
P1093 P3-60 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES HELIXES	3	3	0	3	5				
P1094 P3-61 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES COLLECTORS	3	4	0	4	5				
P1095 P3-62 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MAGNETS	3	4	0	4	5				
P1096 P3-63 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ATTENATORS	3	3	0	3	5				
P1097 P3-64 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE CIRCULATORS	3	3	0	4	5				
P1098 P3-65 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER SIGNAL CAVITIES	3	3	0	4	5				
P1099 P3-66 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER IDLER CAVITIES	3	3	0	4	5				
P1100 P3-67 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER VARACTOR DIODES	3	3	0	4	5				
P1101 P3-68 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE ISOLATORS	3	3	0	4	5				
P1102 P3-69 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER REVERSE-BIAS BATTERIES	3	3	0	4	5				
P1103 P3-70 DO YOU PERFORM TASKS ON ANODES	2	2	0	3	5				
P1104 P3-71 DO YOU PERFORM TASKS ON ANODE COOLING PINS	2	2	0	3	5				
P1105 P3-72 DO YOU PERFORM TASKS ON COUPLING LOOPS	2	2	0	3	5				
P1106 P3-73 DO YOU PERFORM TASKS ON HEATER LEADS	2	2	0	3	5				
P1107 P3-74 DO YOU PERFORM TASKS ON RESONANT CAVITIES	2	2	0	3	5				
P1108 P3-75 DO YOU PERFORM TASKS ON CATHODES	2	2	0	3	5				
P1109 P3-76 DO YOU PERFORM TASKS ON MAGNETS	2	2	0	3	5				
Q1110 Q1-01 DO YOU USE OR REFER TO STORAGE REGISTERS	12	12	10	10	5				
Q1111 Q1-02 DO YOU USE OR REFER TO SHIFT REGISTERS	15	14	20	13	5				
Q1112 Q1-03 DO YOU USE OR REFER TO LOGIC SYMBOLS OF SHIFT REGISTERS	14	14	15	13	5	REGISTERS			
Q1113 Q1-04 DO YOU USE OR REFER TO LOGIC SYMBOLS OF STORAGE REGISTERS	12	12	10	10	5				
Q1114 Q1-05 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	13	13	15	13	5				
Q1115 Q1-06 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF REGISTERS	14	14	15	13	10				

PCT MANS RESPONDING "YES" BY SELECTED GRPS

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TASK GROUP SUMMARY
PLACENT MEMBERS PERFORMING

	D-Y-TSK				
	SPC 151	SPC 152	SPC 153	SPC 154	SPC 155
U116 Q1-07 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES <u>HAVE PASSED</u>	13	13	15	12	5
U117 Q2-01 DO YOU WORK WITH DIGITAL COUNTERS, REGISTERS, OR STORAGE DEVICES IN YOUR PRESENT JOB	21	21	20	15	40
U118 Q2-02 DO YOU USE OR REFER TO DELAY LINES	20	21	10	16	35
U119 Q2-03 DO YOU USE OR REFER TO MAGNETIC CORES	8	9	0	8	10
U120 Q2-04 DO YOU USE OR REFER TO MAGNETIC DRUMS	6	7	0	6	5
U121 Q2-05 DO YOU USE OR REFER TO MAGNETIC TAPES	17	16	20	13	15
U122 Q2-06 DO YOU USE OR REFER TO ACCESS TIME OR SPEED ON MEMORY SYSTEMS	9	10	0	8	5
U123 Q2-07 DO YOU USE OR REFER TO WORD CAPACITY OF MEMORY SYSTEMS	7	8	5	6	5
U124 Q2-08 DO YOU USE OR REFER TO VOLATILITY OF MEMORY SYSTEMS	6	6	0	6	5
U125 Q2-09 DO YOU USE OR REFER TO LOGIC SYMBOL OF DELAY LINES	9	10	0	9	5
U126 J3-01 IN YOUR PRESENT JOB, DO YOU WORK WITH DIGITAL-TO-ANALOG (D/A) CONVERTERS, ANALOG-TO-DIGITAL (A/D) CONVERTERS, OR BINARY-TO-DECIMAL READOUT CONVERTERS	9	9	10	5	10
U127 Q3-02 DO YOU COMPUTE OUTPUT VOLTAGES FOR ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT VOLTAGES?	6	6	5	5	5
U128 Q3-03 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE COUNT IN ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS IS DETERMINED BY ADDING THE DENOMINATORS OF TIME RESISTORS	6	7	5	5	5
U129 Q3-04 DO YOU COMPUTE ANALOG VOLTAGES FOR GIVEN BINARY COUNTS IN ELECTRONIC DIGITAL-TO-ANALOG (D/A) CONVERTERS	7	8	0	5	5
U130 Q3-05 DO YOU PERFORM SAMPLE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	7	7	5	5	5
U131 Q3-06 DO YOU PERFORM HOLD FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	7	7	5	5	5
U132 Q3-07 DO YOU PERFORM COMPARE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	6	7	0	5	5
U133 Q3-08 DO YOU PERFORM DIGITIZE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	7	7	5	5	5
U134 Q3-09 DO YOU PERFORM DON'T REMEMBER WHICH FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	3	2	5	2	0
U135 Q3-10 DO YOU USE OR REFER TO SAMPLE FUNCTION OF A/D CONVERTERS	7	7	10	5	5
U136 Q3-11 DO YOU USE OR REFER TO HOLD FUNCTION OF A/D CONVERTERS	7	7	10	5	5
U137 Q3-12 DO YOU USE OR REFER TO COMPARE FUNCTION OF A/D CONVERTERS	7	7	10	5	5
U138 Q3-13 DO YOU USE OR REFER TO DIGITAL FUNCTION OF A/D CONVERTERS	7	7	5	5	5
U139 Q3-14 DO YOU PERFORM ANY TASKS ON MECHANICAL ANALOG-TO-DIGITAL (A/D) CONVERTERS	3	4	0	3	5

TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

	SPC	SPC	SPC	SPC	SPC	SPC	SPC
K1140 R1-01 DO YOU WORK WITH PHANTASTRON CIRCUITRY IN YOUR PRESENT JOB	2	2	0	2	5		
K1141 R2-01 IN YOUR PRESENT JOB DO YOU WORK WITH SCHMITT TRIGGER CIRCUITS	35	35	35	34	30		
K1142 R2-02 DO YOU TRACE DATA FLOW THROUGH SCHMITT TRIGGER SCHEMATIC DIAGRAMS	27	28	15	27	20	SCHMITT TRIGGERS	
K1143 R2-03 DO YOU USE OR REFER TO SCHMITT TRIGGER LOGIC SYMBOLS	24	25	15	26	15		
K1144 R3-01 IN YOUR PRESENT JOB DO YOU FABRICATE MULTICONDUCTOR CABLES	45	44	40	42	35	CABLE FABRICATION	
K1145 R3-02 DO YOU FABRICATE COAXIAL CABLES	27	56	55	58	50		
K1146 S1-01 IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS ON VISUAL READOUT SYSTEMS	21	21	20	23	10	INPUT/OUTPUT DEVICES	
K1147 S1-02 DO YOU PERFORM ANY TASKS ON NIXIE LIGHTS OR NIXIE LIGHT DECODER SYSTEMS	7	7	10	9	10		
K1148 S1-03 DO YOU ANALYZE NIXIE LIGHT DECODER SYSTEMS USING A LOGIC ANALYZER	4	5	0	6	5		
K1149 S2-01 DO YOU WORK WITH PHOTO TUBES IN YOUR PRESENT JOB	46	46	45	50	30	PHOTO SENSITIVE DEVICES	
K1150 S2-01 IN YOUR PRESENT JOB DO YOU WORK WITH CHOPPER CIRCUITS	15	15	15	15	20		
K1151 S2-02 DO YOU MEASURE EXCITATION FREQUENCIES	10	11	0	10	15		
K1152 S2-03 DO YOU MEASURE VOLTAGE-CURRENT PHASE RELATIONSHIPS	8	8	5	9	10		
K1153 S2-04 DO YOU USE OR REFER TO EXCITATION FREQUENCIES	9	9	0	7	10	SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS)	
K1154 S2-05 DO YOU USE OR REFER TO VOLTAGE-CURRENT PHASE RELATIONSHIPS	7	8	5	7	10		
K1155 S3-06 DO YOU USE SERVOS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	11	12	5	11	15		
K1156 S3-07 DO YOU USE DETECTORS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	12	12	15	11	10		
K1157 S3-08 DO YOU USE ERROR SIGNAL DEVICES IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	12	13	5	13	10		
K1158 S3-09 DO YOU USE COMPARISON CIRCUITS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	12	12	15	12	10		
K1159 T1-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH INFRARED SYSTEMS	3	3	0	1	5		
T1160 T1-02 DO YOU INSPECT INFRARED SYSTEMS	2	2	0	2	5		
T1161 T1-03 DO YOU CLEAN INFRARED SYSTEMS	2	2	0	1	5		
T1162 T1-04 DO YOU ADJUST OR CALIBRATE INFRARED SYSTEMS	2	2	0	1	5	INFRARED	
T1163 T1-05 DO YOU OPERATE INFRARED SYSTEMS	2	2	0	1	5		
T1164 T1-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF INFRARED SYSTEMS	1	1	0	1	5		
T1165 T1-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF INFRARED SYSTEMS	1	1	0	1	5		
T1166 T1-08 DO YOU TROUBLESHOOT DOWN TO INFRARED SYSTEM COMPONENT PARTS	1	1	0	1	5		
T1167 T1-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF INFRARED SYSTEMS	1	1	0	2	0		
T1168 T1-10 DO YOU REMOVE OR REPLACE INFRARED SYSTEM COMPONENT PARTS	2	2	0	2	0		

PCT MEMBERS RESPONDING "YES" BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	D/T-TSK				
	SPC 151	SPC 152	SPC 153	SPC 154	SPC 155
T1169 T1-11 DO YOU USE OR REFER TO FAN REGION	1	1	0	1	0
T1170 T1-12 DO YOU USE OR REFER TO INTERMEDIATE REGION	0	0	0	0	0
T1171 T1-13 DO YOU USE OR REFER TO NEAR REGION	0	0	0	0	0
T1172 T1-14 DO YOU USE OR REFER TO MICRON	1	1	0	0	0
T1173 T1-15 DO YOU USE OR REFER TO GRAY HOLES	0	0	0	0	0
T1174 T1-16 DO YOU USE OR REFER TO BLACK BODIES	0	0	0	0	0
T1175 T1-17 DO YOU USE OR REFER TO ABSORPTION	1	1	0	0	0
T1176 T1-18 DO YOU USE OR REFER TO SCATTERING	1	1	0	0	0
T1177 T1-19 DO YOU USE OR REFER TO ABSOLUTE ZERO	0	0	0	0	0
T1178 T1-20 DO YOU PERFORM TASKS ON RBLTZ	0	0	0	0	0
T1179 T1-21 DO YOU PERFORM TASKS ON TARGET BUTTONS	0	0	0	0	0
T1180 T1-22 DO YOU PERFORM TASKS ON ERECTOR LENSES	0	0	0	0	0
T1181 T1-23 DO YOU PERFORM TASKS ON CIRCULAR LENSES	1	1	0	1	0
T1182 T1-24 DO YOU PERFORM TASKS ON CORRECTION LENSES	1	1	0	0	0
T1183 T1-25 DO YOU PERFORM TASKS ON FILTERS	2	2	0	1	0
T1184 T1-26 DO YOU PERFORM TASKS ON SPHERICAL MIRRORS	0	0	0	0	0
T1185 T1-27 DO YOU PERFORM TASKS ON PLANE MIRRORS	0	0	0	0	0
T1186 T2-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH LASERS	3	3	0	2	0
T1187 T2-02 DO YOU INSPECT LASER SYSTEMS	1	1	0	2	0
T1188 T2-03 DO YOU CLEAN LASER SYSTEMS	1	1	0	1	0
T1189 T2-04 DO YOU OPERATE LASER SYSTEMS	1	1	0	2	0
T1190 T2-05 DO YOU OPERATE LASER SYSTEMS	1	1	0	2	0
T1191 T2-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF LASER SYSTEMS	1	1	0	1	0
T1192 T2-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF LASER SYSTEMS	0	0	0	1	0
T1193 T2-08 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF LASER SYSTEMS	0	0	0	1	0
T1194 T2-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF LASER SYSTEMS	0	0	0	1	0
T1195 T2-10 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF LASER SYSTEMS	0	0	0	1	0
T1196 T2-11 DO YOU USE OR REFER TO ANGSTROMS (A)	1	1	0	0	0
T1197 T2-12 DO YOU USE OR REFER TO ELECTRON ENERGY LEVELS	2	2	0	0	0
T1198 T2-13 DO YOU USE OR REFER TO GROUND STATE	2	2	0	0	0
T1199 T2-14 DO YOU USE OR REFER TO EXCITED STATE	0	0	0	0	0
T1200 T2-15 DO YOU USE OR REFER TO PACKET OF RADIATION	0	0	0	0	0
T1201 T2-16 DO YOU USE OR REFER TO PHOTONS	0	0	0	0	0
T1202 T2-17 DO YOU USE OR REFER TO SPONTANEOUS EMISSION	0	0	0	0	0
T1203 T2-18 DO YOU USE OR REFER TO STIMULATED EMISSION	1	1	0	0	0
T1204 T2-19 DO YOU USE OR REFER TO COHERENCE OR INCOHERENCE	1	1	0	0	0
T1205 T2-20 DO YOU USE OR REFER TO INVERSION LEVEL	0	0	0	0	0
T1206 T2-21 DO YOU USE OR REFER TO MONOCHROMATIC	0	0	0	0	0
T1207 T2-22 DO YOU WORK WITH ACTIVE MATERIALS	1	1	0	0	0
T1208 T2-23 DO YOU WORK WITH PUMPING SOURCES	1	1	0	0	0
T1209 T2-24 DO YOU WORK WITH FULL SILVERED (100% REFLECTIVE) MIRRORS	0	0	0	0	0

PCT MHS RESPONDING 'YES' BY SELECTED GRPS
 TASK GROUP SUMMARY
 PRESENT MEMBERS PERFORMING

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	D-Y-TSK			S-P-C			S-P-C			S-P-C		
	151	152	153	154	155		151	152	153	154	155	
T1210 T2-25 DO YOU WORK WITH HALF SILVERED (1924 REFLECTIVE) MIRRORS	1	1	0	1	0		1	1	0	1	0	
T1211 T2-26 DO YOU WORK WITH HELICAL FLASHTUBES	1	1	0	1	0		0	0	0	1	0	
T1212 T2-27 DO YOU WORK WITH RUBY	1	0	0	0	1		0	0	0	1	0	
T1213 T2-28 DO YOU WORK WITH HELIUM-LEON	1	1	0	1	0		0	0	0	1	0	
T1214 T2-29 DO YOU WORK WITH HELIUM-NEON	1	1	0	1	0		0	0	0	1	0	
T1215 T2-30 DO YOU WORK WITH XENON	0	0	0	0	1		0	0	0	1	0	
T1216 T2-31 DO YOU WORK WITH XEON-HELIUM	0	0	0	0	1		0	0	0	1	0	
T1217 T2-32 DO YOU WORK WITH ARGON	0	0	0	0	1		0	0	0	1	0	
T1218 T2-33 DO YOU WORK WITH NEODYMIUM IN GLASS	0	0	0	0	1		0	0	0	1	0	
T1219 T2-34 DO YOU WORK WITH GALLIUM ARSENIDE	0	0	0	1	0		0	0	0	1	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	1	0		0	0	0	1	0	
T1221 T3-02 DO YOU INSPECT DVST OR MMST	1	1	0	1	0		0	0	1	0	0	
T1222 T3-03 DO YOU CLEAN DVST OR MMST	1	1	0	1	0		0	0	1	0	0	
T1223 T3-04 DO YOU ADJUST OR CALIBRATE DVST OR MMST	1	1	0	1	0		0	0	1	0	0	
T1224 T3-05 DO YOU OPERATE SYSTEMS THAT CONTAIN DVST OR MMST	1	1	0	1	0		0	0	1	0	0	
T1225 T3-06 DO YOU TROUBLESHOOT DVST OR MMST	1	1	0	1	0		0	0	1	0	0	
CIRCUITS												
T1226 T3-07 DO YOU REMOVE OR REPLACE DVST OR MMST TUBES FROM MAJOR ASSEMBLIES OR UNITS	1	1	0	1	0		0	0	1	0	0	
T1227 T3-08 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF DVST	1	1	0	1	0		0	0	1	0	0	
T1228 T3-09 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF MMST	1	1	0	1	0		0	0	1	0	0	
T1229 T3-10 DO YOU PERFORM TASKS ON FLOOD GUNS	0	0	0	0	0		0	0	0	0	0	
T1230 T3-11 DO YOU PERFORM TASKS ON WRITE GUNS	0	0	0	0	0		0	0	0	0	0	
T1231 T3-12 DO YOU PERFORM TASKS ON ATTACK GUNS	0	0	0	0	0		0	0	0	0	0	
T1232 T3-13 DO YOU PERFORM TASKS ON ERASE GUNS	0	0	0	0	0		0	0	0	0	0	
T1233 T3-14 DO YOU PERFORM TASKS ON STORAGE GRIDS	0	0	0	0	0		0	0	0	0	0	
T1234 U1-01 IN YOUR PRESENT JOB DO YOU PERFORM ANY PROGRAMMING TASKS	3	3	0	2	0		2	2	0	1	0	
U1235 U1-02 DO YOU USE OR REFER TO DECIMAL SYSTEMS	2	2	0	1	0		0	0	1	0	0	
U1236 U1-03 DO YOU USE OR REFER TO PROGRAMMS	1	1	0	1	0		0	0	1	0	0	
U1237 U1-04 DO YOU USE OR REFER TO HEXADECIMAL SYSTEMS	1	1	0	1	0		0	0	1	0	0	
U1238 U1-05 DO YOU USE OR REFER TO B-4-1 SYSTEMS	1	1	0	1	0		0	0	1	0	0	
U1239 U1-06 DO YOU USE OR REFER TO FOUR SYSTEMS	0	0	0	0	0		0	0	0	0	0	
U1240 U1-07 DO YOU USE OR REFER TO BINARY SYSTEMS	3	4	0	2	0		2	2	0	1	0	
U1241 U1-08 DO YOU USE OR REFER TO TIME-SHARING	2	2	0	1	0		2	2	0	1	0	
U1242 U1-09 DO YOU USE OR REFER TO DATA WORDS	2	2	0	1	0		2	2	0	1	0	
U1243 U1-10 DO YOU USE OR REFER TO ADDRESS WORDS	2	2	0	1	0		2	2	0	1	0	
U1244 U1-11 DO YOU USE OR REFER TO ADDRESS/SUBADDRESS	2	2	0	1	0		2	2	0	1	0	
U1245 U1-12 DO YOU USE OR REFER TO STEERING/INFORMATION	1	1	0	1	0		0	0	1	0	0	
U1246 U1-13 DO YOU USE OR REFER TO INFORMATION WORDS	1	1	0	1	0		0	0	1	0	0	
U1247 U1-14 DO YOU PERFORM TASKS ON SINGLE LEVEL PROGRAMMING	1	1	0	1	0		0	0	1	0	0	
U1248 U1-15 DO YOU PERFORM TASKS ON MULTI-LEVEL PROGRAMMING	0	0	0	0	0		0	0	0	0	0	

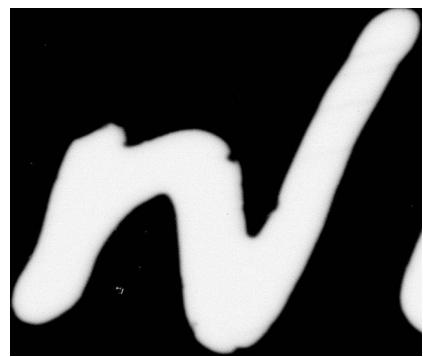
PCL MEMBERS RESPONDING "YES" BY SELECTED GROUPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

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DR-TSK	SPC 151	SPC 152	SPC 153	SPC 154	SPC 155
U1249 U1-16 DO YOU PERFORM TASKS ON INPUT DEVICES	1	1	0	1	0
U1250 U1-17 DO YOU PERFORM TASKS ON STURAGE DEVICES	0	0	0	0	0
U1251 U1-18 DO YOU PERFORM TASKS ON ARITHMETIC SECTIONS	0	0	0	0	0
U1252 U1-19 DO YOU PERFORM TASKS ON CONTROL SECTIONS	1	1	0	1	0
U1253 U1-20 DO YOU PERFORM TASKS ON OUTPUT DEVICES	2	2	0	3	0
U1254 U1-21 DO YOU PERFORM TASKS ON POWER SUPPLIES	2	2	0	3	0
U1255 U2-01 DO YOU USE DECIBELS TO EXPRESS ATTENUATION AND	55	55	60	54	50
U1256 U2-02 DO YOU USE LOGARITHMS TO COMPUTE OUTPUT POWER IN DECIBELS	13	14	0	14	10
U1257 U2-03 DO YOU USE LOGARITHMS TO COMPUTE ATTENUATION IN DECIBELS	13	15	0	14	10
U1258 U2-C4 DUMMY TASK TO IDENTIFY INCUMENTS WHO PERFORMED NO TASKS	3	3	0	5	0

DB AND POWER RATIOS



AD-A045 040 AIR FORCE OCCUPATIONAL MEASUREMENT CENTER LACKLAND A--ETC F/G 5/9
COMMUNICATIONS ELECTRONICS SYSTEMS SPECIALIST AFSC 30455. (U)
SEP 77 T J O'CONNOR, H T WELCH

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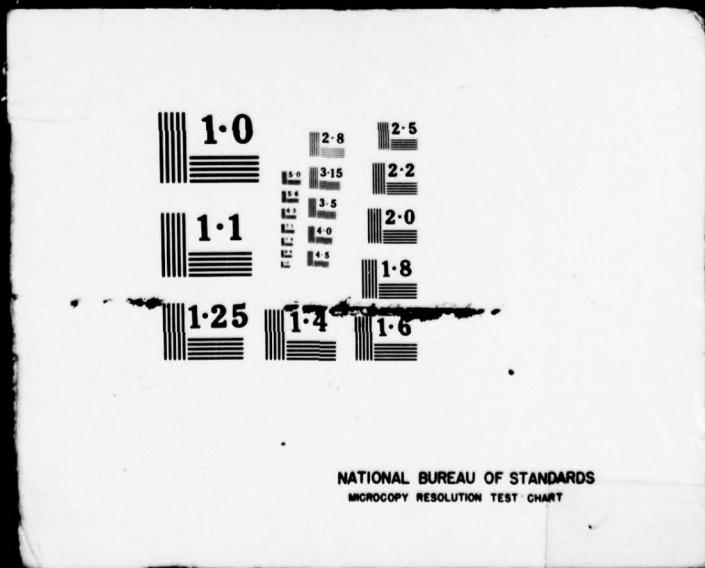
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) <i>This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned as Communications Electronics Systems Specialist (AFSC 30455). The report gives a detailed listing of the technical tasks and knowledge needed to perform the jobs within the specialty or career ladder.</i>		

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This specialty has the following functions:

Installs, maintains, repairs, monitors, and analyzes performance of television systems and equipment producing radiated or cable transmitted signals; and operates and maintains associated test equipment. Installs RF transmission and television equipment. Performs preventive maintenance on television and RF transmission systems. Maintains inspection and maintenance records and completes maintenance data collection forms. Supervises television equipment maintenance personnel.

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