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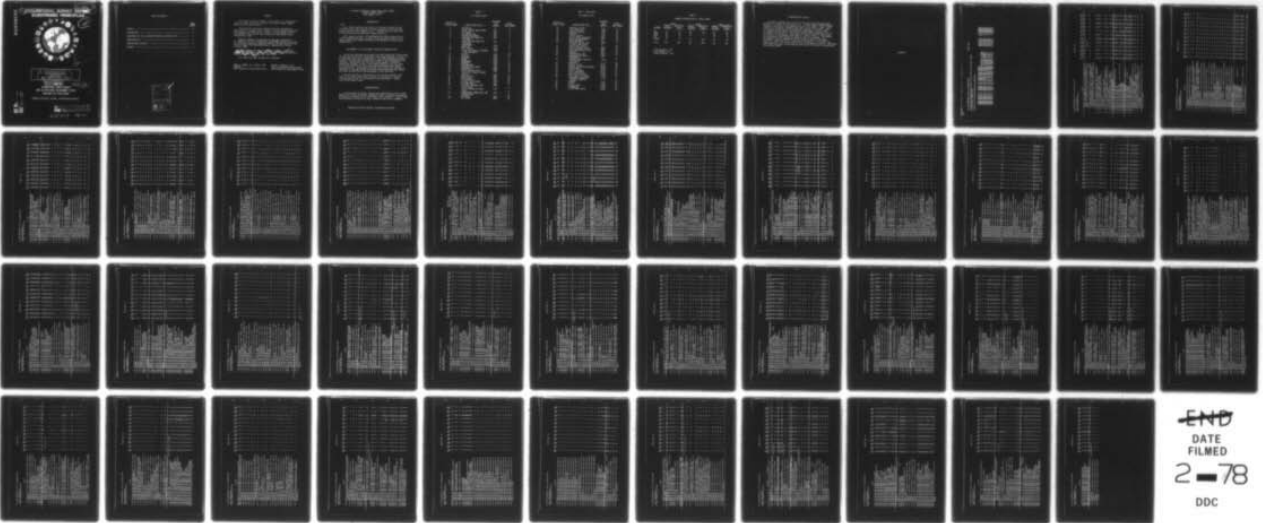
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9 OCCUPATIONAL SURVEY REPORT ELECTRONIC PRINCIPLES



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OCCUPATIONAL SURVEY BRANCH
USAF OCCUPATIONAL MEASUREMENT CENTER
LACKLAND AFB TEXAS 78236

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TABLE OF CONTENTS

	<u>PAGE NUMBER</u>
PREFACE -----	3
INTRODUCTION -----	4
DEVELOPMENT OF THE ELECTRONIC PRINCIPLES INVENTORY (EPI) -----	4
ADMINISTRATION -----	4
PRESENTATION OF RESULTS -----	8
APPENDIX -----	9

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PREFACE

This report presents a summary of the results of a detailed Air Force Electronic Principles Survey of the Avionics Sensor Systems Specialty, AFSC 329X0 A and B.

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 David S. Street. 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
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ELECTRONIC PRINCIPLES OCCUPATIONAL SURVEY REPORT
AVIONICS SENSOR SYSTEMS
AFSC 329X0 A and B

INTRODUCTION

This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned to Avionics Sensor Systems Specialty (AFSC 329X0 A and B). The data for this report were collected during the period June - August 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 329X0 A and B airmen worldwide. Responses from 67 individuals represented 20 percent of the total of all AFSC 329X0 A and B personnel. Table 2 shows the percentage distribution by major command of the survey incumbents.

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TABLE 1
EPI SUBJECT AREAS

<u>SEQUENCE OF SUBJECT AREAS</u>	<u>SUBJECT AREA TITLE</u>	<u>BEGINNING ITEM NUMBER</u>	<u>GPSUM PAGE NUMBER</u>
1	MATHEMATICS	A1	2
2	DIRECT CURRENT AND VOLTAGE	A15	2
3	RESISTANCE	A24	2
4	MULTIMETER USES	B52	3
5	ALTERNATING CURRENT	B61	4
6	INDUCTORS AND INDUCTIVE REACTANCE	B67	4
7	CAPACITORS AND CAPACITIVE REACTANCE	C92	5
8	TRANSFORMERS	C128	6
9	MAGNETISM	C171	7
10	RCL CIRCUITS	D185	8
11	SERIES AND PARALLEL RESONANCE (TIME CONSTANTS)	D229	10
12	FILTERS	D239	10
13	COUPLING	E261	11
14	SOLDERING	E273	11
15	RELAYS	E295	12
16	MICROPHONES	F314	12
17	SPEAKERS	F327	13
18	OSCILLOSCOPES	F342	13
19	SEMICONDUCTOR DIODES	G354	13
20	TRANSISTORS	G404	15
21	TRANSISTOR AMPLIFIERS	G428	16
22	SOLID-STATE SPECIAL PURPOSE DEVICES	H477	19
23	POWER SUPPLIES	H483	19
24	OSCILLATORS	H512	19
25	MULTIVIBRATORS	I539	20
26	LIMITERS AND CLAMPERS	I555	21
27	ELECTRON TUBES	I565	21
28	ELECTRON TUBE AMPLIFIERS AND CIRCUITS	J609	22
29	SPECIAL PURPOSE ELECTRON TUBES	J616	23
30	HETERODYNING, MODULATION, AND DEMODULATION	J632	23
31	AM SYSTEMS	K638	23
32	FM SYSTEMS	K666	24

TABLE 1 (CONTINUED)

EPI SUBJECT AREAS

<u>SEQUENCE OF SUBJECT AREAS</u>	<u>SUBJECT AREA TITLE</u>	<u>BEGINNING ITEM NUMBER-</u>	<u>GPSUM PAGE NUMBER</u>
33	NUMBERING SYSTEMS	K685	25
34	LOGIC FUNCTIONS	L695	25
35	BOOLEAN EQUATIONS	L708	26
36	COUNTERS	L733	27
37	TIMING CIRCUITS	M757	27
38	USE OF SIGNAL GENERATORS	M769	28
39	MOTORS AND GENERATORS	M779	28
40	METER MOVEMENTS	N808	29
41	SATURABLE REACTORS AND MAGNETIC AMPLIFIERS	N818	29
42	WAVESHAPING CIRCUITS	N834	30
43	SINGLE SIDEBAND SYSTEMS	O845	30
44	PULSE MODULATION SYSTEMS	O875	31
45	ANTENNAS	O914	32
46	TRANSMISSION LINES	P953	34
47	WAVEGUIDES AND CAVITY RESONATORS	P984	35
48	MICROWAVE AMPLIFIERS AND OSCILLATORS	P1034	37
49	REGISTERS	Q1110	39
50	STORAGE DEVICES	Q1117	40
51	DIGITAL TO ANALOG CONVERTERS	Q1126	40
52	PHANTASTRONS	Q1140	41
53	SCHMITT TRIGGERS	R1141	41
54	CABLE FABRICATION	R1144	41
55	INPUT/OUTPUT DEVICES	S1146	41
56	PHOTO SENSITIVE DEVICES	S1149	41
57	SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS)	S1150	41
58	INFRARED	T1159	41
59	LASERS	T1186	42
60	DISPLAY TUBES	T1220	43
61	PROGRAMMING	U1234	43
62	DB AND POWER RATIOS	U1255	44

TABLE 2

COMMAND REPRESENTATION OF SURVEY SAMPLE

COMMAND	329X0A		329X0B		329X0 A and B	
	PERCENT ASSIGNED	PERCENT OF SAMPLE	PERCENT ASSIGNED	PERCENT OF SAMPLE	PERCENT ASSIGNED	PERCENT OF SAMPLE
TAC	41	43	48	52	45	46
USAFE	19	33	36	8	28	24
PACAF	20	10	11		15	6
SAC	14	5			6	3
OTHERS	<u>6</u>	<u>9</u>	<u>5</u>	<u>40</u>	<u>6</u>	<u>21</u>
TOTAL	100	100	100	100	100	100

Total Assigned - 330
 Total Sample - 67
 Percent Sampled - 20%

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 twelve selected groups identified for this report. Pages 2-44 show the percentage of the incumbents responding to the EPI items. The computer program results display the percent members answering "yes" to the subject area questions. The reader can locate a specific subject area by referring to the Appendix page number as listed in Table 1. For example, the Transformers area results are given on page 6 of the GPSUM. The percentage of survey respondents indicating use of specific electronic principles ranged from high in areas such as Soldering (p. 12) and Oscilloscopes (p. 13) to low in areas such as AM and FM Systems (pp. 24-25). Additional AFSC 329XOA and B data can be obtained upon request to the Chief, Occupational Survey Branch (OMY).

PCT MGRS RESPONDING 'YES' BY SELECTED GRPS

OPSMIO PAGE 1

TABULATION OF ELECTRONIC PRINCIPLES UTILIZATION DATA FOR SELECTED GROUPS
IN THE 329X04/8 CAREER FIELD.

REPORTS ON THE FOLLOWING GROUPS WERE REQUESTED

GROUP IDENTITY =	SPC202	ALL AIRMEN DAFSC 32980A		CONTAINING	42 MEMBERS.
GROUP IDENTITY =	SPC203	ALL AIRMEN DAFSC 32980B		CONTAINING	25 MEMBERS.
GROUP IDENTITY =	SPC204	ALL AIRMEN DAFSC 32980CA	STATIONED IN CONUS	CONTAINING	23 MEMBERS.
GROUP IDENTITY =	SPC205	ALL AIRMEN DAFSC 32980B	STATIONED IN CONUS	CONTAINING	21 MEMBERS.
GROUP IDENTITY =	SPC206	ALL AIRMEN DAFSC 32980A	STATIONED OVERSEAS	CONTAINING	19 MEMBERS.
GROUP IDENTITY =	SPC207	ALL AIRMEN DAFSC 32980B	STATIONED OVERSEAS	CONTAINING	4 MEMBERS.
GROUP IDENTITY =	SPC210	ALL ALL AMN DAFSC 32980A	ASSIGNED TO TAC	CONTAINING	18 MEMBERS.
GROUP IDENTITY =	SPC211	ALL ALL AMN DAFSC 32980A	ASSIGNED TO USAF	CONTAINING	14 MEMBERS.
GROUP IDENTITY =	SPC212	ALL ALL AMN DAFSC 32980A	ASSIGNED TO SAC	CONTAINING	2 MEMBERS.
GROUP IDENTITY =	SPC213	ALL ALL AMN DAFSC 32980A	ASSIGNED TO PACAF	CONTAINING	4 MEMBERS.
GROUP IDENTITY =	SPC214	ALL ALL AMN DAFSC 32980B	ASSIGNED TO TAC	CONTAINING	13 MEMBERS.
GROUP IDENTITY =	SPC215	ALL ALL AMN DAFSC 32980B	ASSIGNED TO USAF	CONTAINING	2 MEMBERS.

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DI-TSK

MATHEMATICS

Task ID	Description	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207	SPC 210	SPC 211	SPC 212	SPC 213	SPC 214	SPC 215
A 1	AI-01 DO YOU USE INSTRUMENTS, SUCH AS METERS OR OSCILLOSCOPES, IN WHICH IT IS NECESSARY TO AMPLIFY OR ATTENUATE VOLTAGE, RESISTANCE, ETC., BY POWERS OF 10.	88	64	63	57	95	100	83	100	100	75	46	100
A 2	AI-02 DO YOU USE PUBLICATIONS, SUCH AS A TECHNICAL ORDERS OR MAINTENANCE MANUALS, IN WHICH IT IS NECESSARY FOR YOU TO MULTIPLY OR DIVIDE BY A POWER OF 10 BEFORE YOU CAN APPLY THE INFORMATION FROM THE PUBLICATION IN A USEFUL WAY ON THE JOB.	76	24	78	14	74	75	78	71	100	75	15	50
A 3	AI-03 DO YOU REARRANGE AND SOLVE FORMULAS OR EQUATIONS.	40	20	52	14	26	50	50	14	50	50	15	50
A 4	AI-04 DO YOU CALCULATE THE SQUARE ROOT OF A QUANTITY.	17	6	17	5	16	25	22	7	0	25	8	0
A 5	AI-05 DO YOU SOLVE FOR UNKNOWN QUANTITIES.	33	16	43	10	21	50	33	7	100	50	15	50
A 6	AI-06 DO YOU CONVERT NUMBERS TO LOGARITHMS.	10	4	4	0	16	25	6	7	0	25	0	0
A 7	AI-07 DO YOU USE LOGARITHM TABLES IN ANY TYPE OF CALCULATIONS.	12	4	4	0	21	25	6	21	0	0	0	0
A 8	AI-08 DO YOU SOLVE QUADRATIC EQUATIONS.	7	4	4	0	11	25	6	0	0	25	0	0
A 9	AI-09 DO YOU USE THE NATURAL SYSTEM OF LOGARITHMS.	7	4	4	0	11	25	6	0	0	25	0	0
A 10	AI-10 DO YOU PERFORM CALCULATIONS ON VECTOR QUANTITIES.	21	8	22	5	21	25	11	21	50	0	8	0
A 11	AI-11 DO YOU WORK WITH TRIGONOMETRIC FUNCTIONS SUCH AS SINE, COSINE, OR TANGENT.	48	8	61	5	32	25	61	21	50	50	8	0
A 12	AI-12 DO YOU DETERMINE AREAS OF PLANE FIGURES.	10	6	9	5	11	25	11	7	0	25	8	0
A 13	AI-13 DO YOU SOLVE OR USE SIMULTANEOUS EQUATIONS.	10	4	9	0	11	25	11	7	0	25	0	0
A 14	AI-14 DO YOU SOLVE OR USE PROPORTIONS.	24	8	30	5	16	25	39	14	0	25	8	0
A 15	A2-01 DO YOU USE THE TERM VOLTAGE OR VOLTS (V).	98	64	76	81	100	100	94	100	100	100	69	100
A 16	A2-02 DO YOU USE THE TERM ELECTROMOTIVE FORCE (EMF).	43	36	43	29	42	75	44	36	50	50	31	50
A 17	A2-03 DO YOU USE THE TERM OHM.	100	84	100	81	100	100	100	100	100	100	69	100
A 18	A2-04 DO YOU USE THE TERM ION.	29	0	22	0	37	0	28	21	0	75	0	0
A 19	A2-05 DO YOU USE THE TERM DYNE.	12	4	17	5	5	0	22	0	0	25	0	0
A 20	A2-06 DO YOU USE THE TERM AMPERE.	90	76	87	76	95	75	89	100	100	75	62	50
A 21	A2-07 DO YOU USE THE TERM NEUTRON.	24	8	17	5	32	25	22	21	0	50	8	0
A 22	A2-08 DO YOU USE THE TERM COULOMB.	24	4	22	5	32	0	28	34	0	25	0	0
A 23	A2-09 DO YOU USE THE TERM PROTON.	24	8	17	5	37	25	22	29	0	50	8	0
A 24	A3-01 DO YOU WORK WITH RESISTORS IN YOUR PRESENT JOB.	88	68	87	62	89	100	89	93	100	78	38	100
A 25	A3-02 DO YOU INSPECT RESISTORS.	86	64	78	57	95	100	83	93	50	100	38	100
A 26	A3-03 DO YOU CLEAN RESISTORS.	64	28	65	24	43	50	67	50	50	100	23	0
A 27	A3-04 DO YOU ADJUST RESISTORS.	95	60	91	52	100	100	94	100	100	31	100	0
A 28	A3-05 DO YOU CHECK OHMIC VALUE OR RESISTORS.	88	68	83	62	95	100	89	93	50	100	38	100
A 29	A3-06 DO YOU REMOVE OR REPLACE RESISTORS.	81	64	78	57	84	100	83	79	50	100	38	100
A 30	A3-07 DO YOU USE OR REFER TO TEMPERATURE COEFFICIENTS FOR RESISTORS ON ANY TASKS YOU PERFORM.	48	24	43	19	53	50	44	43	50	75	15	50
A 31	A3-08 DO YOU USE OR REFER TO RESISTOR SYMBOLS SUCH AS FIXED RESISTOR SYMBOLS OR TAPPED RESISTOR SYMBOLS.	86	68	78	62	95	100	83	93	50	100	46	100
A 32	A3-09 DO YOU IDENTIFY OR CLASSIFY THE RESISTORS YOU WORK WITH AS CARBON, FIXED WIRE, SLIDE TAP, RHEOSTAT, OR POTENTIOMETER.	88	60	83	52	95	100	83	93	100	100	38	100
A 33	A3-10 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE OHMIC VALUE OF RESISTANCE.	83	60	78	52	89	100	83	86	50	100	38	100

PCT MEMS RESPONDING 'YES' BY SELECTED GRPS

GPSMID PAGE 3

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207	SPC 210	SPC 211	SPC 212	SPC 213	SPC 214	SPC 215
A 34 A3-11 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE TOLERANCE.	74	64	74	57	74	100	78	64	50	100	38	100
A 35 A3-12 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE FAILURE RATE.	19	4	22	5	14	0	22	14	50	25	8	0
A 36 A3-13 DO YOU MAKE DECISIONS IN WHICH YOU MUST DETERMINE HOW TWO OR MORE BATTERIES MUST BE CONNECTED TOGETHER TO ACHIEVE A SPECIFIC VOLTAGE.	31	16	26	10	37	50	28	36	50	25	6	0
A 37 A3-14 DO YOU USE OR REFER TO THE SCHEMATIC SYMBOLS WHICH REPRESENT BATTERIES, FUSES, CONDUCTORS, LAMPS, OR SWITCHES	90	68	87	62	95	100	94	100	50	75	38	100
A 38 A3-15 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES RESISTIVE CIRCUITS.	57	44	48	43	68	50	56	64	50	75	38	0
A 39 A3-16 DO YOU CALCULATE TOTAL CURRENT FOR SERIES RESISTIVE CIRCUITS.	60	36	52	33	68	50	56	64	50	75	31	0
A 40 A3-17 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES RESISTIVE CIRCUITS.	57	40	52	38	63	50	56	57	50	75	31	0
A 41 A3-18 DO YOU CALCULATE POWER DISSIPATION FOR SERIES RESISTIVE CIRCUITS.	50	36	48	33	53	50	50	50	50	50	31	0
A 42 A3-19 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES PARALLEL RESISTIVE CIRCUITS.	57	40	48	36	68	50	50	64	50	75	38	0
A 43 A3-20 DO YOU CALCULATE TOTAL CURRENT FOR SERIES PARALLEL RESISTIVE CIRCUITS.	55	40	43	38	68	50	50	64	50	75	31	0
A 44 A3-21 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES PARALLEL RESISTIVE CIRCUITS.	57	40	52	38	63	50	54	57	50	75	31	0
A 45 A3-22 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR SERIES PARALLEL RESISTIVE CIRCUITS.	48	40	39	38	58	50	44	60	50	75	31	0
A 46 A3-23 DO YOU CALCULATE POWER DISSIPATION FOR SERIES PARALLEL RESISTIVE CIRCUITS.	50	36	48	33	53	50	50	50	50	50	31	0
A 47 A3-24 DO YOU CALCULATE TOTAL RESISTANCE FOR PARALLEL RESISTIVE CIRCUITS.	55	44	48	43	63	50	50	64	50	50	38	0
A 48 A3-25 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RESISTIVE CIRCUITS.	55	40	48	38	63	50	50	64	50	50	31	0
A 49 A3-26 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR PARALLEL RESISTIVE CIRCUITS.	52	40	48	38	58	50	50	57	50	50	31	0
A 50 A3-27 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR PARALLEL RESISTIVE CIRCUITS.	48	40	43	38	53	50	44	50	50	50	31	0
A 51 A3-28 DO YOU CALCULATE POWER DISSIPATION FOR PARALLEL RESISTIVE CIRCUITS.	45	36	43	33	47	50	44	50	50	25	31	0
B 52 B1-01 DO YOU MEASURE RESISTANCE.	90	84	87	81	95	100	94	93	50	100	69	100
B 53 B1-02 DO YOU REPAIR OHMMETERS.	7	0	4	0	11	0	6	14	0	0	0	0
B 54 B1-03 DO YOU MEASURE VOLTAGE.	95	80	91	76	100	100	94	100	100	100	62	100
B 55 B1-04 DO YOU REPAIR VOLTMETERS.	7	0	4	0	11	0	6	14	0	0	0	0
B 56 B1-05 DO YOU REPAIR AMMETERS.	6	0	4	0	5	0	4	7	0	0	0	0
B 57 B1-06 DO YOU MEASURE CURRENT.	83	68	83	62	84	100	83	79	100	100	38	100
B 58 B1-07 DO YOU USE MULTIMETERS.	98	76	96	71	100	100	94	100	100	100	54	100
B 59 B1-08 DO YOU DIRECTLY USE A QUANTITY OF CHARGE CALLED A COULOMB.	5	0	9	0	0	0	11	0	0	0	0	0
B 60 B1-09 DO YOU READ SCHEMATICS.	95	88	94	86	95	100	94	93	100	100	77	100

MULTIMETER USES

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	202	203	204	205	206	207	210	211	212	213	214	215	216	217	218	219	220	221	222
61 82-01 DO YOU USE OR REFER TO THE TERM EFFECTIVE VOLTAGE (RMS).	83	44	83	43	84	50	83	86	100	75	38	0							
62 82-02 DO YOU USE OR REFER TO THE TERM PEAK TO PEAK VOLTAGE.	93	64	91	57	95	100	94	100	100	75	38	100							
63 82-03 DO YOU USE OR REFER TO THE TERM AVERAGE VOLTAGE (DC).	74	52	65	52	84	50	67	86	100	75	38	0							
64 82-04 DO YOU USE OR REFER TO THE TERM WAVE LENGTH.	83	48	87	48	79	50	89	79	100	75	38	0							
65 82-05 DO YOU USE OR REFER TO THE TERM FREQUENCY.	90	64	87	62	95	75	94	100	100	75	38	50							
66 82-06 DO YOU USE OR REFER TO THE TERM INSTANTANEOUS VALUE.	50	8	43	5	58	25	44	64	100	25	0	0							
67 83-01 DO YOU WORK WITH INDUCTORS OR CIRCUITS CONTAINING INDUCTORS, CHOKES, OR CHOKE COILS IN YOUR PRESENT JOB.	57	58	61	52	53	75	67	50	50	50	31	50							
68 83-02 DO YOU INSPECT INDUCTORS.	50	44	57	38	42	75	61	36	50	50	31	50							
69 83-03 DO YOU CLEAN INDUCTORS.	31	16	39	14	21	25	44	29	50	0	15	0							
70 83-04 DO YOU ADJUST INDUCTORS.	48	20	52	14	42	50	56	36	50	50	0	0							
71 83-05 DO YOU REMOVE OR REPLACE INDUCTORS.	45	52	57	48	32	75	61	21	50	50	38	50							
72 83-06 DO YOU USE OR REFER TO INDUCTANCE.	55	40	61	38	47	50	67	43	50	50	38	0							
73 83-07 DO YOU USE OR REFER TO HENRIES.	50	32	57	29	42	50	61	36	50	50	31	0							
74 83-08 DO YOU USE OR REFER TO INDUCTIVE REACTANCE.	50	36	52	33	47	50	54	43	50	50	31	0							
75 83-09 DO YOU USE OR REFER TO COPPER LOSS IN INDUCTORS.	2	4	0	0	5	25	0	7	0	0	0	0							
76 83-10 DO YOU USE OR REFER TO HYSTERESIS LOSS IN INDUCTORS.	5	4	4	0	5	25	6	7	0	0	0	0							
77 83-11 DO YOU USE OR REFER TO EDDY CURRENT LOSS IN INDUCTORS.	7	4	4	5	11	0	6	7	0	25	0	0							
78 83-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTANCE IS PROPORTIONAL TO THE SQUARE OF THE NUMBER OF TURNS OF THE COIL.	7	4	4	5	11	0	6	7	0	0	0	0							
79 82-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE CROSS SECTIONAL AREA OF THE CORE.	7	0	13	0	0	0	17	0	0	0	0	0							
80 82-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS INVERSELY PROPORTIONAL TO ITS LENGTH.	7	0	9	0	5	0	11	7	0	0	0	0							
81 82-15 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.	7	0	9	10	5	0	11	7	0	0	0	0							
82 82-16 DO YOU CALCULATE INDUCTANCE FOR PARTICULAR INDUCTORS USING FORMULAS.	12	4	17	5	5	0	22	0	0	0	0	0							
83 83-17 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTANCE IN SERIES.	14	16	17	10	11	50	22	7	0	0	15	0							
84 83-18 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN PARALLEL.	14	16	17	10	11	50	22	7	0	0	15	0							
85 83-19 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES-PARALLEL CIRCUITS.	17	16	17	10	16	50	22	14	0	0	15	0							
86 83-20 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LAGS VOLTAGE IN AC INDUCTOR CIRCUITS.	17	28	17	19	16	75	22	14	0	0	15	50							
87 83-21 DO YOU CALCULATE INDUCTIVE REACTANCE.	19	24	17	19	21	50	22	21	0	0	23	0							
88 83-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTIVE REACTANCE IS DIRECTLY PROPORTIONAL TO FREQUENCY.	17	24	17	19	16	50	22	14	0	0	15	0							
89 83-23 DO YOU WORK WITH POWER INDUCTORS.	31	32	35	29	26	50	39	21	50	25	15	0							
90 83-24 DO YOU WORK WITH AUDIO FREQUENCY INDUCTORS.	17	8	17	5	16	25	22	7	0	25	8	0							
91 83-25 DO YOU WORK WITH RADIO FREQUENCY INDUCTORS.	19	12	22	14	16	0	28	7	0	25	0	0							

ALTERNATING CURRENT

INDUCTORS AND INDUCTIVE REACTANCE

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DI-TSK CAPACITORS AND
CAPACITIVE REACTANCE

	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207	SPC 210	SPC 211	SPC 212	SPC 213	SPC 214	SPC 215
C 92 CI-01 DO YOU WORK WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS IN YOUR PRESENT JOB.	83	64	83	87	84	100	83	86	100	75	31	100
C 93 CI-02 DO YOU INSPECT CAPACITORS.	74	64	78	57	74	100	83	71	50	75	38	100
C 94 CI-03 DO YOU CLEAN CAPACITORS.	48	20	43	19	53	25	50	50	50	75	15	0
C 95 CI-04 DO YOU ADJUST CAPACITORS.	93	24	39	19	47	50	33	43	50	50	8	0
C 96 CI-05 DO YOU TEST CAPACITORS.	67	64	70	57	63	100	72	57	50	75	31	100
C 97 CI-06 DO YOU DISCHARGE CAPACITORS.	67	40	74	38	58	50	72	50	100	75	23	0
C 98 CI-07 DO YOU REMOVE OR REPLACE CAPACITORS.	69	64	74	57	63	100	78	57	50	75	38	100
C 99 CI-08 DO YOU USE OR REFER TO DISTRIBUTED CAPACITANCE.	21	4	26	5	16	0	33	14	0	25	0	0
C 100 CI-09 DO YOU USE OR REFER TO ORBITAL STRESS OF ELECTRONS IN A DIELECTRIC.	7	0	9	0	5	0	11	7	0	0	0	0
C 101 CI-10 DO YOU USE OR REFER TO FARADS, MICROFARADS, OR PICOFARADS.	67	60	74	52	58	100	78	57	50	50	38	100
C 102 CI-11 DO YOU USE OR REFER TO CAPACITANCE.	67	60	70	57	63	75	78	64	0	50	38	50
C 103 CI-12 DO YOU USE OR REFER TO DIELECTRIC CONSTANT	10	8	9	5	11	25	11	14	0	0	8	0
C 104 CI-13 DO YOU USE OR REFER TO WORKING VOLTAGE RATING OF CAPACITORS	43	48	48	43	37	75	58	29	50	50	31	50
C 105 CI-14 DO YOU USE OR REFER TO CAPACITIVE REACTANCE	43	20	52	14	32	50	54	34	50	0	15	0
C 106 CI-15 DO YOU USE OR REFER TO CAPACITOR COLOR CODES	24	28	35	29	16	25	39	14	50	25	8	0
C 107 CI-16 DO YOU WORK WITH CAPACITORS IN DC CIRCUITS	74	68	70	62	79	100	72	84	50	50	38	100
C 108 CI-17 DO YOU WORK WITH CAPACITORS IN AC CIRCUITS	74	64	70	62	79	75	78	86	0	50	38	50
C 109 CI-18 DO YOU WORK WITH CAPACITORS IN CIRCUITS WITH BOTH DC AND AC CIRCUITS	74	64	70	62	79	75	72	79	50	75	38	50
C 110 CI-19 DO YOU WORK WITH CAPACITORS IN DON'T REMEMBER WHICH CAPACITORS USING FORMULAS	36	8	52	10	16	0	50	21	100	0	0	0
C 111 CAPACITORS CALCULATE CAPACITANCE FOR PARTICULAR CAPACITORS USING FORMULAS	19	8	17	0	21	50	22	21	0	0	0	0
C 112 CI-21 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS DIRECTLY PROPORTIONAL TO THE DIELECTRIC CONSTANT	10	0	13	0	5	0	17	7	0	0	0	0
C 113 CI-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS INVERSELY PROPORTIONAL TO THE DIELECTRIC THICKNESS	12	4	17	0	5	25	22	7	0	0	0	0
C 114 CI-23 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES	29	20	30	14	26	50	39	21	0	25	23	0
C 115 CI-24 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN PARALLEL	29	20	30	14	26	50	39	21	0	25	23	0
C 116 CI-25 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES-PARALLEL CIRCUITS	29	20	30	14	26	50	39	21	0	25	23	0
C 117 CI-26 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT DOES NOT FLOW THROUGH CAPACITORS, IT ONLY APPEARS TO DO SO	33	16	39	14	26	25	44	29	0	0	8	50
C 118 CI-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEADS VOLTAGE IN AC CAPACITOR CIRCUITS	31	16	35	5	26	75	44	21	0	25	8	50
C 119 CI-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITIVE REACTANCE IS INVERSELY PROPORTIONAL TO FREQUENCY	21	12	22	5	21	50	28	21	0	0	8	0
C 120 CI-29 DO YOU CALCULATE CAPACITIVE REACTANCE	24	8	26	5	21	25	33	21	0	0	8	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

	202	203	204	205	206	207	210	211	212	213	214	215
C 121 C1-30 DO YOU WORK WITH ROTOR-STATOR (VARIABLE) CAPACITORS	31	16	30	14	32	25	28	21	0	50	15	0
C 122 C1-31 DO YOU WORK WITH COMPRESSION (TRIMMER) CAPACITORS	24	24	22	19	26	50	28	29	0	0	15	0
C 123 C1-32 DO YOU WORK WITH ELECTROLYTIC (FIXED) CAPACITORS	62	60	68	52	58	100	72	50	0	75	31	100
C 124 C1-33 DO YOU WORK WITH PAPER (FIXED) CAPACITORS	50	60	57	52	42	100	61	29	0	75	31	100
C 125 C1-34 DO YOU WORK WITH MICA (FIXED) CAPACITORS	57	64	61	57	53	100	67	43	0	75	31	100
C 126 C1-35 DO YOU WORK WITH CERAMIC (FIXED) CAPACITORS	57	56	61	48	53	100	61	50	50	50	23	100
C 127 C1-36 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF CAPACITORS	38	8	48	10	26	0	50	36	50	0	8	0
C 128 C2-01 DO YOU WORK WITH TRANSFORMERS IN YOUR PRESENT JOB	64	56	43	52	89	75	56	93	0	75	31	50
C 129 C2-02 DO YOU INSPECT TRANSFORMERS	67	60	52	57	84	75	56	93	50	50	38	50
C 130 C2-03 DO YOU CLEAN TRANSFORMERS	31	32	24	29	37	50	28	36	50	50	15	50
C 131 C2-04 DO YOU ADJUST TRANSFORMERS	24	20	22	19	26	25	22	21	0	25	8	0
C 132 C2-05 DO YOU TROUBLESHOOT TRANSFORMERS	62	52	43	48	84	75	50	86	0	75	38	50
C 133 C2-06 DO YOU REMOVE OR REPLACE COMPLETE TRANSFORMERS	62	64	52	62	74	75	56	71	50	75	38	50
C 134 C2-07 DO YOU REMOVE OR REPLACE TRANSFORMER PARTS, SUCH AS THE PRIMARY WINDING	2	0	4	0	0	0	6	0	0	0	0	0
C 135 C2-08 DO YOU MAKE A DISTINCTION BETWEEN MUTUAL INDUCTION AND MUTUAL INDUCTANCE (M)	5	0	0	0	11	0	0	14	0	0	0	0
C 136 C2-09 DO YOU USE THE SYMBOL FOR MUTUAL INDUCTANCE, M	2	0	0	0	5	0	0	7	0	0	0	0
C 137 C2-10 DO YOU REFER TO OR USE THE COEFFICIENT OF COUPLING WHEN WORKING WITH TRANSFORMERS	7	8	13	10	0	0	17	0	0	0	8	0
C 138 C2-11 DO YOU CALCULATE TURNS RATIOS FOR TRANSFORMERS USING CURRENT OR VOLTAGE RATIOS	24	12	30	5	16	50	39	14	0	0	0	50
C 139 C2-12 DO YOU REFER TO REFLECTED IMPEDANCE WHEN WORKING WITH TRANSFORMERS	10	0	9	0	11	0	11	7	0	25	0	0
C 140 C2-13 DO YOU CALCULATE IMPEDANCE INTERACTIONS FOR TRANSFORMERS	5	0	4	0	5	0	6	7	0	0	0	0
C 141 C2-14 DO YOU WORK WITH AUTOTRANSFORMERS	17	16	9	14	26	25	11	29	0	0	15	0
C 142 C2-15 DO YOU WORK WITH POWER TRANSFORMERS	62	64	52	62	74	75	61	71	0	75	38	50
C 143 C2-16 DO YOU WORK WITH AUDIO TRANSFORMERS	19	8	13	5	26	25	17	21	0	25	8	0
C 144 C2-17 DO YOU WORK WITH RADIO FREQUENCY TRANSFORMERS	19	12	22	10	14	25	26	7	0	25	15	50
C 145 C2-18 DO YOU WORK WITH DON'T REMEMBER WHAT TYPE OF TRANSFORMERS	21	8	26	10	16	0	28	21	0	0	0	0
C 146 C2-19 DO YOU CHECK TRANSFORMERS FOR OPEN WINDINGS BY MEASURING RESISTANCE	62	56	57	52	68	75	61	79	50	25	38	50
C 147 C2-20 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING RESISTANCE	62	52	57	48	68	75	61	79	50	25	31	50
C 148 C2-21 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING OUTPUT VOLTAGES	57	28	52	19	63	75	56	64	50	50	15	50
C 149 C2-22 DO YOU MEASURE RESISTANCE OF TRANSFORMER WINDINGS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO	21	16	26	14	16	25	28	21	50	0	8	0
C 150 C2-23 DO YOU MEASURE OUTPUT VOLTAGE OF TRANSFORMERS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO	33	24	35	14	32	75	39	43	50	0	8	50
C 151 C2-24 DO YOU REFER TO BASIC TRANSFORMER SCHEMATIC SYMBOLS FOR TRANSFORMERS	64	64	61	62	68	75	67	71	50	50	38	50

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207	SPC 210	SPC 211	SPC 212	SPC 213	SPC 214	SPC 215
C 162 C2-25 DO YOU REFER TO MULTIPLE SECONDARY-WINDINGS SCHEMATIC SYMBOLS FOR TRANSFORMERS	45	52	48	48	42	75	54	50	0	0	38	50
C 153 C2-26 DO YOU REFER TO MULTIPLE TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS	55	60	57	57	53	75	61	64	50	0	38	50
C 154 C2-27 DO YOU REFER TO CENTER TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS	55	64	52	62	58	75	54	71	50	0	38	50
C 155 C2-28 DO YOU REFER TO AIR CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS	50	40	52	43	47	25	61	57	0	0	31	0
C 156 C2-29 DO YOU REFER TO IRON CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS	48	44	48	43	47	50	54	57	0	0	31	50
C 157 C2-30 DO YOU REFER TO COMBINATIONS OF THE ABOVE SCHEMATIC SYMBOLS FOR TRANSFORMERS	52	52	52	52	53	50	61	64	50	0	38	50
C 158 C2-31 DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING SCHEMATIC SYMBOLS	36	32	39	29	32	50	44	36	50	0	23	0
C 159 C2-32 DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN TRANSFORMERS YOU WORK WITH	29	16	30	14	26	25	39	36	0	0	8	0
C 160 C2-33 DO YOU REFER TO OR USE THE GENERAL RULE THAT THE TURNS RATIO OF A TRANSFORMER IS EQUAL TO THE VOLTAGE RATIO	26	20	26	10	26	75	33	29	0	0	0	50
C 161 C2-34 DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN RATIOS FOR TRANSFORMERS	33	28	35	19	32	75	39	36	0	0	15	50
C 162 C2-35 DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS USING TURNS RATIOS	21	8	22	5	21	25	28	21	0	0	8	0
C 163 C2-36 DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS USING TURNS RATIOS	10	8	9	5	11	25	11	7	0	0	8	0
C 164 C2-37 DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH THREE PHASE TRANSFORMERS	48	44	48	38	47	75	56	60	0	25	38	50
C 165 C2-38 DO YOU INSPECT THREE PHASE TRANSFORMERS	36	40	30	33	42	75	33	50	0	0	23	50
C 166 C2-39 DO YOU CLEAN OR LUBRICATE THREE PHASE TRANSFORMERS	10	4	9	0	11	25	11	14	0	0	0	0
C 167 C2-40 DO YOU ADJUST THREE PHASE TRANSFORMERS	10	8	9	0	11	50	11	14	0	0	0	0
C 168 C2-41 DO YOU TROUBLESHOOT THREE PHASE TRANSFORMERS	33	32	30	29	37	50	33	36	0	25	23	0
C 169 C2-42 DO YOU REMOVE OR REPLACE COMPLETE THREE PHASE TRANSFORMERS	38	48	35	43	42	75	39	43	0	25	31	50
C 170 C2-43 DO YOU REMOVE OR REPLACE THREE PHASE TRANSFORMER PARTS SUCH AS WINDINGS	2	0	4	0	0	0	6	0	0	0	0	0
C 171 C3-01 DO YOU USE OR REFER TO PERMANENT MAGNETS	14	52	13	48	14	75	11	14	50	25	31	50
C 172 C3-02 DO YOU USE OR REFER TO TEMPORARY MAGNETS	12	28	13	24	11	50	11	7	50	0	15	0
C 173 C3-03 DO YOU USE OR REFER TO RETENTIVITY OF MAGNETIC MATERIALS	5	8	4	5	5	25	6	7	0	0	0	0
C 174 C3-04 DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC MATERIALS	10	8	4	5	16	25	6	14	0	25	0	0
C 175 C3-05 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS	12	12	9	10	16	25	11	14	0	25	0	0
C 176 C3-06 DO YOU USE OR REFER TO RESIDUAL MAGNETISM	10	8	9	5	11	25	11	14	0	0	8	0
C 177 C3-07 DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE OR FLUX	14	28	9	24	21	50	11	21	0	0	23	50
C 178 C3-08 DO YOU USE OR REFER TO WEBER'S THEORY OF MAGNETISM	2	0	0	0	5	0	0	7	0	0	0	0

PCT MEMS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

	202	203	204	205	206	207	210	211	212	213	214	215
C 179 C3-09 DO YOU USE OR REFER TO DOMAIN THEORY OF MAGNETISM	0	0	0	0	0	0	0	0	0	0	0	0
C 180 C3-10 DO YOU USE OR REFER TO MAGNETIC INDUCTION	17	16	9	14	26	25	11	21	0	25	15	0
C 181 C3-11 DO YOU USE OR REFER TO FLUX DENSITY	14	8	9	5	21	25	11	21	0	0	8	0
C 182 C3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT FOR MAGNETIC POLES, LIKE POLES REPEL AND UNLIKE POLES ATTRACT	33	36	26	29	42	75	22	50	50	0	23	50
C 183 C3-13 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE DIRECTION OF MAGNETIC FIELDS ABOUT STRAIGHT WIRES	14	20	9	19	21	25	11	21	0	0	15	0
C 184 C3-14 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE NORTH POLE OF A CURRENT CARRYING COIL	14	16	9	14	21	25	11	21	0	0	8	0
D 185 D1-01 DO YOU WORK WITH RCL, LR, RCL CIRCUITS IN YOUR PRESENT JOB	40	28	39	29	42	25	44	36	0	50	8	50
D 186 D1-02 DO YOU USE OR REFER TO VECTORS WHEN WORKING WITH RCL CIRCUITS	10	12	4	10	16	25	0	14	50	0	15	0
D 187 D1-03 DO YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN WORKING WITH RCL CIRCUITS	12	8	9	5	16	25	11	14	0	0	8	0
D 188 D1-04 DO YOU USE OR REFER TO SINE WHEN WORKING WITH RCL CIRCUITS	36	0	39	0	32	0	39	29	50	25	0	0
D 189 D1-05 DO YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL CIRCUITS	36	0	39	0	32	0	39	29	50	25	0	0
D 190 D1-06 DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL CIRCUITS	31	4	35	0	26	25	33	21	50	25	0	0
D 191 D1-07 DO YOU USE OR REFER TO WATTS WHEN WORKING WITH RCL CIRCUITS	36	16	43	19	26	0	50	21	0	25	15	0
D 192 D1-08 DO YOU USE OR REFER TO TRUE POWER (PT) WHEN WORKING WITH RCL CIRCUITS	17	8	22	10	11	0	28	14	0	0	8	0
D 193 D1-09 DO YOU USE OR REFER TO MAXIMUM POWER (PM) WHEN WORKING WITH RCL CIRCUITS	26	8	35	10	16	0	39	21	0	0	8	0
D 194 D1-10 DO YOU USE OR REFER TO AVERAGE POWER (PAVE) WHEN WORKING WITH RCL CIRCUITS	26	12	35	14	16	0	39	14	0	25	8	0
D 195 D1-11 DO YOU USE OR REFER TO APPARENT POWER (PA) WHEN WORKING WITH RCL CIRCUITS	10	8	13	10	5	0	17	7	0	0	8	0
D 196 D1-12 DO YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING WITH RCL CIRCUITS	12	4	22	5	0	0	22	0	0	0	0	0
D 197 D1-13 DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN WORKING WITH RCL CIRCUITS	29	16	30	14	26	25	39	21	0	25	8	50
D 198 D1-14 DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH RCL CIRCUITS	33	12	39	14	26	0	39	21	50	25	8	0
D 199 D1-15 DO YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH RCL CIRCUITS	31	8	43	10	16	0	44	7	50	25	8	0
D 200 D1-16 DO YOU USE OR REFER TO RESONANT FREQUENCY WHEN WORKING WITH RCL CIRCUITS	33	8	39	10	26	0	39	21	50	25	0	0
D 201 D1-17 DO YOU USE OR REFER TO HALF POWER POINTS WHEN WORKING WITH RCL CIRCUITS	19	0	13	0	26	0	17	21	0	25	0	0
D 202 D1-18 DO YOU USE OR REFER TO BANDPASS REGION WHEN WORKING WITH RCL CIRCUITS	31	8	35	10	26	0	39	21	0	25	8	0
D 203 D1-19 DO YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH RCL CIRCUITS	14	0	13	0	10	0	17	7	0	25	0	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

0Y-TSK

	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	202	203	204	205	206	207	210	211	212	213	214	215	216	217	218	219	220	221	222
D 204 D1-20 DO YOU USE OR REFER TO TANK CIRCUITS WHEN WORKING WITH RCL CIRCUITS	33	20	35	19	32	25	34	21	0	50	15	50							
D 205 D1-21 DO YOU DETERMINE VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS	17	0	13	0	21	0	17	21	0	0	0	0							
D 206 D1-22 DO YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS	7	4	4	5	11	0	6	14	0	0	0	0							
D 207 D1-23 DO YOU CALCULATE TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS	17	4	17	5	16	0	22	7	0	25	0	0							
D 208 D1-24 DO YOU CALCULATE PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS	5	0	4	0	5	0	6	7	0	0	0	0							
D 209 D1-25 DO YOU CALCULATE TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS	14	4	17	5	11	0	22	7	0	0	0	0							
D 210 D1-26 DO YOU CALCULATE IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS	10	0	9	0	11	0	11	7	0	0	0	0							
D 211 D1-27 DO YOU CALCULATE APPARENT POWER (PA) FOR SERIES RCL CIRCUITS	5	0	4	0	5	0	6	7	0	0	0	0							
D 212 D1-28 DO YOU CALCULATE TRUE POWER (PT) FOR SERIES RCL CIRCUITS	15	0	13	0	5	0	17	7	0	0	0	0							
D 213 D1-29 DO YOU CALCULATE POWER FACTORS (PF) FOR SERIES RCL CIRCUITS	7	0	9	0	5	0	11	7	0	0	0	0							
D 214 D1-30 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RCL CIRCUITS	10	4	9	5	11	0	11	7	0	0	0	0							
D 215 D1-31 DO YOU CALCULATE IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS	7	0	9	0	5	0	11	7	0	0	0	0							
D 216 D1-32 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING THE ASSUMED VOLTAGE METHOD	7	0	9	0	5	0	11	7	0	0	0	0							
D 217 D1-33 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING OHM'S LAW	7	8	4	10	11	0	6	14	0	0	15	0							
D 218 D1-34 DO YOU CHECK CAPACITORS USING OHMMETERS	45	28	43	29	47	25	44	43	50	50	0	50							
D 219 D1-35 DO YOU CHECK CAPACITORS USING SUBSTITUTION	33	8	30	5	37	25	33	29	50	50	0	50							
D 220 D1-36 DO YOU CHECK INDUCTORS USING OHMMETERS	38	20	35	24	42	0	33	43	50	25	0	0							
D 221 D1-37 DO YOU CHECK INDUCTORS USING SUBSTITUTION	33	8	26	5	42	25	33	36	0	50	0	0							
D 222 D1-38 DO YOU USE OR REFER TO THE GENERAL RULE THAT $\theta = \theta - \theta$ AND $\theta = \theta + \theta$ FOR RESONANT CIRCUITS	5	0	9	0	0	0	11	0	0	0	0	0							
D 223 D1-39 DO YOU CALCULATE RESONANT FREQUENCIES FOR RCL CIRCUITS	5	0	4	0	5	0	6	0	0	0	0	0							
D 224 D1-40 DO YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE RESONANT FREQUENCY FOR SERIES RCL CIRCUITS	14	4	17	5	11	0	17	7	50	0	0	0							
D 225 D1-41 DO YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT RESONANT FREQUENCY FOR PARALLEL RCL CIRCUITS	12	4	13	0	11	25	11	7	50	0	0	0							
D 226 D1-42 DO YOU USE OR REFER TO THE GENERAL RULE THAT HALF POWER POINTS ARE AT 70.7 PERCENT OF THE PEAK CURRENT VALUE	26	0	26	0	26	0	22	21	50	25	0	0							
D 227 D1-43 DO YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO Q	12	0	9	0	16	0	6	7	50	25	0	0							
D 228 D1-44 DO YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE, CAPACITANCE, OR INDUCTANCE WILL AFFECT CURRENT OR PHASE ANGLES FOR RCL CIRCUITS	12	8	13	5	11	25	17	7	0	0	0	0							

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SERIES AND
PARALLEL RESONANCE
(TIME CONSTANTS)

DY-TSK

202	203	204	205	206	207	210	211	212	213	214	215
24	28	26	19	21	75	33	14	0	25	8	50
0 229	0 230	0 231	0 232	0 233	0 234	0 235	0 236	0 237	0 238	0 239	0 240
D	D	D	D	D	D	D	D	D	D	D	D
21	28	26	19	16	75	33	14	0	0	8	50
12	20	17	10	5	75	22	0	0	25	0	50
12	4	17	5	5	0	22	7	0	0	0	0
14	12	17	5	11	50	22	7	0	0	0	50
7	0	9	0	5	0	11	0	0	0	0	0
7	4	13	0	0	25	17	0	0	0	0	0
7	4	13	0	0	25	17	0	0	0	0	0
12	4	13	0	11	25	17	7	0	0	0	0
55	56	52	48	58	100	67	57	0	50	23	100
45	52	48	43	42	100	61	43	0	25	23	100
26	24	26	24	26	25	33	29	0	25	8	0
29	24	30	10	26	100	39	29	0	25	8	100
48	48	52	43	42	75	61	43	0	25	31	50
36	44	39	33	32	100	44	29	0	25	31	100
48	60	57	52	37	100	67	36	0	25	31	100
31	52	35	43	26	100	44	21	0	25	31	100
43	28	52	14	32	100	61	29	0	25	8	100
43	24	52	14	32	75	61	29	0	25	8	50
33	20	48	14	16	50	56	7	0	25	8	50
24	16	30	14	16	25	39	7	0	25	8	0
21	28	26	29	16	25	28	14	0	25	23	50
14	20	9	14	21	50	11	21	0	0	0	0
10	24	4	19	16	50	6	14	0	0	0	0
7	8	4	5	11	25	6	17	0	0	0	0
33	32	39	29	26	50	50	21	0	50	23	100
29	28	26	19	32	75	33	21	0	50	8	50
31	32	30	29	32	50	39	21	0	50	8	0
29	28	26	19	32	75	33	21	0	50	8	50

0 229 D3-01 IN YOUR PRESENT JOB, DO YOU WORK WITH, USE, OR REFER TO SERIES OR PARALLEL RESONANT CIRCUITS OR TIME CONSTANTS

0 230 D3-02 DO YOU WORK WITH, USE, OR REFER TO TIME CONSTANTS

0 231 D3-03 DO YOU WORK WITH, USE, OR REFER TO AVAILABLE VOLTAGE INTERVALS

0 232 D3-04 DO YOU WORK WITH, USE, OR REFER TO TRANSIENT INTERVALS

0 233 D3-05 DO YOU USE OR REFER TO THE GENERAL RULE THAT A CAPACITOR IS FULLY CHARGED (OR DISCHARGED) AFTER FIVE (5) TIME CONSTANTS (TC)

0 234 D3-06 DO YOU USE OR REFER TO UNIVERSAL TIME CONSTANT CHARTS

0 235 D3-07 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CIRCUIT CURRENT OR COMPONENT VOLTAGES AFTER A SPECIFIC TIME FOR RC OR LR CIRCUITS

0 236 D3-08 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE THE TIME REQUIRED FOR CIRCUIT CURRENT OR COMPONENT VOLTAGES TO REACH SPECIFIC VALUES FOR RC OR LR CIRCUITS

0 237 D3-09 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE COMPONENT VALUES REQUIRED FOR CIRCUIT CURRENT AND COMPONENT VOLTAGES TO REACH SPECIFIC VALUES IN SPECIFIC TIMES

0 238 D3-10 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT IN LR CIRCUITS REACHES ITS MINIMUM VALUE (OR ZERO) AFTER FIVE (5) TIME CONSTANTS

0 239 D3-01 DO YOU WORK WITH CIRCUITS USED AS FILTERS IN YOUR PRESENT JOB

0 240 D3-02 DO YOU INSPECT FILTER CIRCUITS

0 241 D3-03 DO YOU CLEAN FILTER CIRCUITS

0 242 D3-04 DO YOU ALIGN OR ADJUST FILTER CIRCUITS

0 243 D3-05 DO YOU TROUBLESHOOT TO THE FILTER CIRCUIT LEVEL

0 244 D3-06 DO YOU TROUBLESHOOT TO COMPONENT PARTS

0 245 D3-07 DO YOU REMOVE OR REPLACE THE COMPLETE FILTER CIRCUIT PARTS

0 246 D3-08 DO YOU REMOVE OR REPLACE FILTER CIRCUIT COMPONENT PARTS

0 247 D3-09 DO YOU WORK WITH LOW PASS FILTERS

0 248 D3-10 DO YOU WORK WITH HIGH PASS FILTERS

0 249 D3-11 DO YOU WORK WITH BANDPASS FILTERS

0 250 D3-12 DO YOU WORK WITH BAND-REJECT FILTERS

0 251 D3-13 DON'T REMEMBER WHICH TYPE OF FILTER YOU WORK WITH

0 252 D3-14 DO YOU WORK WITH L-SECTION FILTER CONFIGURATION

0 253 D3-15 DO YOU WORK WITH T-SECTION FILTER CONFIGURATION

0 254 D3-16 DO YOU WORK WITH PI-SECTION FILTER CONFIGURATION

0 255 D3-17 DON'T REMEMBER WHICH TYPE FILTER CONFIGURATION

0 256 D3-18 DO THE FILTERS YOU WORK WITH USE PARALLEL RESONANT CIRCUITS

0 257 D3-19 DO THE FILTERS YOU WORK WITH USE SERIES-PARALLEL CIRCUITS

0 258 D3-20 DO THE FILTERS YOU WORK WITH USE SERIES RESONANT CIRCUITS

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

6PSMIO PAGE 11

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	202	203	204	205	206	207	210	211	212	213	214	215
0 259 03-21 DON'T REMEMBER WHICH TYPE OF BASIC CIRCUIT	29	28	30	29	26	25	39	29	0	0	23	50
0 260 03-22 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CAPACITANCE OR INDUCTANCE VALUES REQUIRED FOR SPECIFIC FILTERS	10	4	13	0	5	25	17	0	0	25	0	0

DY-TSK

E 261 E1-01 DO YOU WORK WITH COUPLING DEVICES IN YOUR PRESENT JOB
E 262 E1-02 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH RC COUPLING

COUPLING

E 263 E1-03 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH IMPEDANCE COUPLING
E 264 E1-04 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH TRANSFORMER COUPLING

E 265 E1-05 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM RC COUPLING
E 266 E1-06 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM IMPEDANCE COUPLING
E 267 E1-07 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM TRANSFORMER COUPLING

E 268 E1-08 DO YOU WORK WITH DIRECTLY COUPLED CIRCUITS
E 269 E1-09 DO YOU WORK WITH CAPACITIVE-RESISTIVE COUPLED CIRCUITS
E 270 E1-10 DO YOU WORK WITH CAPACITIVE-INDUCTIVE COUPLED CIRCUITS

E 271 E1-11 DO YOU WORK WITH TRANSFORMER COUPLED CIRCUITS
E 272 E1-12 DON'T REMEMBER WHICH TYPE OF COUPLING CIRCUITS
E 273 E2-01 IN YOUR PRESENT JOB, DO YOU PERFORM SOLDERING

SOLDERING

E 274 E2-02 DO YOU SELECT TYPE OF SOLDER TO USE
E 275 E2-03 DO YOU ADD FLUX TO CONNECTIONS
E 276 E2-04 DO YOU CLEAN CONNECTIONS USING SOLVENTS
E 277 E2-05 DO YOU STRIP INSULATION FROM WIRES
E 278 E2-06 DO YOU CONNECT OR DISCONNECT HEAT SINKS
E 279 E2-07 DO YOU BEND OR SHAPE WIRES OR LEADS
E 280 E2-08 DO YOU CUT WIRES
E 281 E2-09 DO YOU FILE OR SHAPE SOLDERING IRON TIPS
E 282 E2-10 DO YOU TIN SOLDERING IRON TIPS
E 283 E2-11 DO YOU CLEAN SOLDERING IRON TIPS
E 284 E2-12 DO YOU CLEAN ELECTRICAL SURFACES USING ERASERS
E 285 E2-13 DO YOU TIN OR PRE-TIN CONDUCTORS
E 286 E2-14 DO YOU INSPECT SOLDERED CONNECTIONS
E 287 E2-15 DO YOU DESOLDER CONNECTIONS BY WICKING
E 288 E2-16 DO YOU DESOLDER CONNECTIONS USING VACUUM DESOLDERING TOOLS

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

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task	202	203	204	205	206	207	210	211	212	213	214	215
E 291 E2-19 DO YOU MAKE HARDWIRE CONNECTIONS	86	64	91	57	79	100	94	79	50	75	38	100
E 292 E2-20 DO YOU MAKE PRINTED CIRCUIT BOARD CONNECTIONS	79	44	78	57	79	100	83	79	50	75	38	100
E 293 E2-21 DO YOU SOLDER PASSIVE COMPONENTS SUCH AS RESISTORS OR CAPACITORS ON PRINTED CIRCUIT BOARDS	71	64	74	57	68	100	78	64	50	75	38	100
C 294 E2-22 DO YOU SOLDER ACTIVE COMPONENTS SUCH AS SOLID-STATE DIODES OR TRANSISTORS ON PRINTED CIRCUIT BOARDS	69	64	70	57	68	100	72	64	50	75	38	100
E 295 E3-01 DO YOU WORK WITH RELAYS ON YOUR PRESENT JOB	71	72	65	47	79	100	78	86	0	50	46	100
E 296 E3-02 DO YOU ADJUST RELAYS	33	20	35	10	32	75	44	29	0	50	0	50
E 297 E3-03 DO YOU CLEAN RELAYS	43	36	43	33	42	50	50	36	50	50	15	50
E 298 E3-04 DO YOU INSPECT RELAYS	71	48	74	43	68	75	83	71	50	50	31	50
E 299 E3-05 DO YOU REMOVE OR REPLACE COMPLETE RELAYS	62	64	70	57	53	100	78	50	0	50	38	100
E 300 E3-06 DO YOU REMOVE OR REPLACE PARTS OR RELAYS	17	20	13	14	21	50	17	14	0	50	0	50
E 301 E3-07 DO YOU TROUBLESHOOT RELAYS	71	64	70	62	74	75	72	79	50	50	46	50
E 302 E3-08 DO YOU STRAIGHTEN RELAY CONTACTS	40	14	43	10	37	50	50	29	0	50	0	50
E 303 E3-09 DO YOU PERFORM TASKS ON RELAY CONTACTS	31	24	30	24	32	25	39	29	0	50	8	0
E 304 E3-10 DO YOU PERFORM TASKS ON RELAY COILS	5	4	9	5	5	0	11	0	0	0	0	0
E 305 E3-11 DO YOU PERFORM TASKS ON RELAY COLLS	5	4	9	5	5	0	11	0	0	0	0	0
E 306 E3-12 DO YOU PERFORM TASKS ON RELAY ARMATURES	10	4	13	5	5	0	17	0	0	25	0	0
E 307 E3-13 DO YOU PERFORM TASKS ON RELAY SPRINGS	17	8	22	10	11	0	28	7	0	25	0	0
E 308 E3-14 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY OPER (NO) SCHEMATIC SYMBOLS FOR RELAYS	79	64	78	57	79	100	83	86	50	50	38	100
E 309 E3-15 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY CLOSED (NC) SCHEMATIC SYMBOLS FOR RELAYS	79	64	78	57	79	100	83	86	50	50	38	100
E 310 E3-16 DO YOU USE OR REFER TO SINGLE POLE, DOUBLE THROW (SPDT) SCHEMATIC SYMBOLS FOR RELAYS	79	56	78	48	79	100	83	86	50	50	31	100
E 311 E3-17 DO YOU USE OR REFER TO DOUBLE POLE, DOUBLE THROW (DPDT) SCHEMATIC SYMBOLS FOR RELAYS	79	56	78	48	79	100	83	86	50	50	31	100
E 312 E3-18 DO YOU USE OR REFER TO OTHER RELAY SYMBOLS SCHEMATIC SYMBOLS FOR RELAYS	74	52	70	43	79	100	78	86	0	50	23	100
E 313 E3-19 DO YOU CHECK ELECTRICAL CONTINUITY OF COILS BY MEASURING RESISTANCE	62	60	57	52	68	100	54	71	50	50	31	100
F 314 FI-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH MICROPHONES	2	4	4	5	0	0	4	0	0	0	8	0
F 315 FI-02 DO YOU INSPECT MICROPHONES	2	4	4	5	0	0	4	0	0	0	8	0
F 316 FI-03 DO YOU CLEAN MICROPHONES	2	4	4	5	0	0	4	0	0	0	8	0
F 317 FI-04 DO YOU OPERATE MICROPHONES	2	4	4	5	0	0	4	0	0	0	8	0
F 318 FI-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT PARTS OR MICROPHONES	2	4	4	5	0	0	4	0	0	0	8	0
F 319 FI-06 DO YOU TROUBLESHOOT DOWN TO MICROPHONE PARTS	0	0	0	0	0	0	0	0	0	0	0	0
F 320 FI-07 DO YOU REMOVE OR REPLACE COMPLETE MICROPHONES	2	4	4	5	0	0	4	0	0	0	8	0
F 321 FI-08 DO YOU REMOVE OR REPLACE MICROPHONE PARTS	0	0	0	0	0	0	0	0	0	0	0	0
F 322 FI-09 DO YOU PERFORM TASKS ON CARBON MICROPHONES	0	0	0	0	0	0	0	0	0	0	0	0
F 323 FI-10 DO YOU PERFORM TASKS ON CAPACITOR MICROPHONES	0	0	0	0	0	0	0	0	0	0	0	0
F 324 FI-11 DO YOU PERFORM TASKS ON CRYSTAL MICROPHONES	0	0	0	0	0	0	0	0	0	0	0	0
F 325 FI-12 DO YOU PERFORM TASKS ON DYNAMIC MICROPHONES	2	0	4	0	0	0	0	0	0	0	0	0
F 326 FI-13 DO YOU PERFORM TASKS ON VELOCITY RIBBON MICROPHONES	0	0	0	0	0	0	0	0	0	0	0	0

UY-TSK

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DI-TSK	202	203	204	205	206	207	210	211	212	213	214	215
F 327 F2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH SPEAKERS	2	4	4	5	0	0	4	0	0	0	0	0
F 328 F2-02 DO YOU INSPECT SPEAKERS	2	4	4	5	0	0	4	0	0	0	0	0
F 329 F2-03 DO YOU CLEAN SPEAKERS	2	4	4	5	0	0	4	0	0	0	0	0
F 330 F2-04 DO YOU OPERATE SPEAKERS	2	4	4	5	0	0	4	0	0	0	0	0
F 331 F2-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT PARTS OF SPEAKERS	2	0	4	0	0	0	4	0	0	0	0	0
F 332 F2-06 DO YOU TROUBLESHOOT DOWN TO SPEAKER PARTS	0	0	0	0	0	0	0	0	0	0	0	0
F 333 F2-07 DO YOU REMOVE OR REPLACE COMPLETE SPEAKERS	2	0	4	0	0	0	4	0	0	0	0	0
F 334 F2-08 DO YOU REMOVE OR REPLACE SPEAKER PARTS	0	0	0	0	0	0	0	0	0	0	0	0
F 335 F2-09 DO YOU PERFORM ANY TASKS ON SPEAKER CONES	0	0	0	0	0	0	0	0	0	0	0	0
F 336 F2-10 DO YOU PERFORM ANY TASKS ON SPEAKER SPIGERS	0	0	0	0	0	0	0	0	0	0	0	0
F 337 F2-11 DO YOU PERFORM ANY TASKS ON SPEAKER FIELD COILS	0	0	0	0	0	0	0	0	0	0	0	0
F 338 F2-12 DO YOU PERFORM ANY TASKS ON SPEAKER VOICE COILS	0	0	0	0	0	0	0	0	0	0	0	0
F 339 F2-13 DO YOU PERFORM ANY TASKS ON SPEAKER PERMANENT MAGNETS	0	4	0	5	0	0	0	0	0	0	0	0
F 340 F2-14 DO YOU PERFORM ANY TASKS ON SPEAKER ELECTROMAGNETS	0	0	0	0	0	0	0	0	0	0	0	0
F 341 F2-15 DO YOU PERFORM ANY TASKS ON SPEAKER SOFT IRON CORES	0	0	0	0	0	0	0	0	0	0	0	0
F 342 F3-01 DO YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB	93	68	91	62	95	100	94	100	100	75	38	100
F 343 F3-02 DO YOU USE OSCILLOSCOPES TO PERFORM OPERATIONAL CHECKS	90	64	83	57	100	100	89	100	100	100	38	100
F 344 F3-03 DO YOU USE OSCILLOSCOPES TO PERFORM ALIGNMENTS OR ADJUSTMENTS	88	60	78	52	100	100	83	100	100	100	31	100
F 345 F3-04 DO YOU USE OSCILLOSCOPES TO TROUBLESHOOT ELECTRONIC CIRCUITS	83	60	74	52	95	100	78	100	100	75	38	100
F 346 F3-05 DO YOU USE OSCILLOSCOPES TO MEASURE FREQUENCY	90	56	87	52	95	75	89	93	100	100	31	50
F 347 F3-06 DO YOU USE OSCILLOSCOPES TO MEASURE TIME	90	60	87	52	95	100	89	100	100	75	31	100
F 348 F3-07 DO YOU USE OSCILLOSCOPES TO OBSERVE LISAJOUS PATTERNS	29	16	35	14	21	25	44	14	0	50	15	0
F 349 F3-08 DO YOU USE OSCILLOSCOPES TO OBSERVE SIGNALS WHILE UTILIZING ATTENUATOR PROBES	86	60	83	52	89	100	83	86	100	100	31	100
F 350 F3-09 DO YOU USE OSCILLOSCOPES TO MAKE FREQUENCY OR TIME MEASUREMENTS USING DELAY TIME MULTIPLIERS	79	44	74	43	84	50	72	86	100	75	23	50
F 351 F3-10 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE	86	56	74	48	100	100	78	100	100	100	15	100
F 352 F3-11 DO YOU USE OSCILLOSCOPES TO MEASURE OR OBSERVE SIGNALS AFTER FIRST ADJUSTING THE GAIN AND DC BAL CONTROLS	79	32	74	24	84	75	83	86	50	75	8	50
F 353 F3-12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE	90	52	83	48	100	75	89	100	100	100	23	50
G 354 G1-01 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT JOB	74	64	74	62	74	75	72	64	100	100	38	50
G 355 G1-02 DO YOU INSPECT DIODES	44	56	65	57	63	50	72	50	50	100	38	0
G 356 G1-03 DO YOU REMOVE OR REPLACE DIODES	71	64	74	62	68	75	78	57	50	100	38	50
G 357 G1-04 DO YOU CHECK DIODES USING AN INSTRUMENT	67	44	65	62	68	75	78	57	0	100	38	50
G 358 G1-05 DO YOU USE ENERGY LEVEL DIAGRAMS IN YOUR WORK WITH DIODES	14	0	17	0	11	0	22	7	0	0	0	0
G 359 G1-06 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES, TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE, TO COMPUTE FORWARD OR REVERSE LIAS RESISTANCE	14	0	13	0	14	0	17	7	0	25	0	0
G 360 G1-07 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR DIODES	21	12	13	10	32	25	17	29	0	25	8	0

PCT MBS RESPONDING 'YES' BY SELECTED GRPS

GPSMIO PAGE 14

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-75K

	202	203	204	205	206	207	210	211	212	213	214	215
6 361 61-08 DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES	45	44	52	43	37	50	61	36	0	25	23	50
6 362 61-09 DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO OTHER ELECTRONIC COMPONENTS, SUCH AS RESISTORS, BASED ON THEIR PHYSICAL APPEARANCE	67	56	65	52	68	75	67	64	50	75	31	50
6 363 61-10 DO YOU REFER TO OR DO YOU DETERMINE THE GENERAL EFFECTS OF DOPING ON CURRENT FLOW	17	4	13	5	21	0	17	14	0	25	8	0
6 364 61-11 DO YOU USE OR REFER TO MEASUREMENTS OF FORWARD BIAS RESISTANCE	52	32	61	33	42	25	74	43	0	25	15	0
6 365 61-12 DO YOU USE OR REFER TO DIODE COLOR CODING	36	32	48	33	21	25	56	21	50	25	23	0
6 366 61-13 DO YOU USE OR REFER TO CENTRIFUGAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS	10	0	9	0	11	0	11	7	0	0	0	0
6 367 61-14 DO YOU USE OR REFER TO CENTRIPETAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS	10	0	9	0	11	0	11	7	0	0	0	0
6 368 61-15 DO YOU USE OR REFER TO DIODE NUMBERING SYSTEM, SUCH AS IN 538	52	56	61	52	42	75	67	36	50	50	38	50
6 369 61-16 DO YOU USE OR REFER TO KINETIC ENERGY OF AN ELECTRON MOVING IN ORBIT	7	0	9	0	5	0	11	7	0	0	0	0
6 370 61-17 DO YOU USE OR REFER TO POTENTIAL ENERGY OF AN ELECTRON MOVING IN ORBIT	7	0	4	0	11	0	6	14	0	0	0	0
6 371 61-18 DO YOU USE OR REFER TO MEASUREMENTS OF REVERSE BIAS RESISTANCE	48	32	48	33	47	25	61	50	0	25	15	0
6 372 61-19 DO YOU USE OR REFER TO NUMBER OF ELECTRONS IN A PARTICULAR SHELL OR ORBIT	7	0	4	0	11	0	6	7	0	0	0	0
6 373 61-20 DO YOU USE OR REFER TO PERMISSIBLE ENERGY LEVELS OF AN ORBITING ELECTRON	10	0	9	0	11	0	11	7	0	0	0	0
6 374 61-21 DO YOU USE OR REFER TO FORBIDDEN ENERGY LEVELS OF AN ORBITING ELECTRON	7	0	4	0	11	0	6	7	0	0	0	0
6 375 61-22 DO YOU USE OR REFER TO VALENCE ELECTRONS (THOSE IN THE OUTERMOST SHELL)	10	0	9	0	11	0	11	7	0	0	0	0
6 376 61-23 DO YOU USE OR REFER TO ATOMIC NUMBER (TOTAL NUMBER OF ELECTRONS IN ATOM)	10	0	9	0	11	0	11	7	0	0	0	0
6 377 61-24 DO YOU USE OR REFER TO SYMBOLS ON THE DIODE WHICH INDICATE THE CATHODE END	62	52	65	48	58	75	72	50	50	75	31	50
6 378 61-25 DO YOU NEED TO KNOW WHICH MATERIALS ARE USED IN THE CONSTRUCTION OF DIODES SUCH AS GERMANIUM OR SILICON	31	12	39	10	21	25	44	7	0	50	0	0
6 379 61-26 DO YOU NEED TO KNOW THAT SEMICONDUCTORS HAVE NEGATIVE TEMPERATURE COEFFICIENTS OF RESISTANCE (AS TEMPERATURE INCREASES RESISTANCE DECREASES)	43	28	43	24	42	50	50	36	50	50	15	0
6 380 61-27 DO YOU USE OR REFER TO PN JUNCTION DIODE CHARACTERISTIC CURVES, SUCH AS VOLTAGE - CURRENT CHARACTERISTIC CURVES (PERHAPS YOU DO THIS TO IDENTIFY POINTS OF STRUCTURAL BREAKDOWN OR OPERATING REGIONS)	17	16	22	10	11	50	22	0	0	25	0	0
6 381 61-28 DO YOU DETERMINE WHETHER PN JUNCTION DIODES ARE FORWARD BIASED OR REVERSE BIASED WHEN YOU READ OR INTERPRET CIRCUIT DIAGRAMS	60	44	70	38	47	75	72	43	50	50	15	50
6 382 61-29 DO YOU USE OR REFER TO VALENCE BAND IN SEMICONDUCTOR MATERIALS	12	0	9	0	0	0	11	14	0	0	0	0

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

GPSM10 PAGE 15

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

Task	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207	SPC 210	SPC 211	SPC 212	SPC 213	SPC 214	SPC 215
6 383 61-30 DO YOU USE OR REFER TO FORBIDDEN BAND IN SEMICONDUCTOR MATERIALS	12	0	9	0	16	0	11	14	0	0	0	0
6 384 61-31 DO YOU USE OR REFER TO CONDUCTION BAND IN SEMICONDUCTOR MATERIALS	14	0	13	0	16	0	17	14	0	0	0	0
6 385 61-32 DO YOU USE OR REFER TO COVALENT BONDING IN SEMICONDUCTOR MATERIALS	12	0	9	0	16	0	11	14	0	0	0	0
6 386 61-33 DO YOU USE OR REFER TO ELECTRON-HOLE PAIR CREATED IN SEMICONDUCTORS	14	0	13	0	16	0	17	14	0	0	0	0
6 387 61-34 DO YOU USE OR REFER TO ELECTRON FLOW OR HOLE FLOW IN SEMICONDUCTORS	24	4	30	5	16	0	33	14	0	0	0	0
6 388 61-35 DO YOU USE OR REFER TO DONOR IMPURITY IN SEMICONDUCTORS	12	4	9	5	16	0	11	14	0	0	0	0
6 389 61-36 DO YOU USE OR REFER TO ACCEPTOR IMPURITY IN SEMICONDUCTORS	12	4	9	5	16	0	11	14	0	0	0	0
6 390 61-37 DO YOU USE OR REFER TO P-TYPE SEMICONDUCTOR MATERIAL	33	20	43	19	21	25	50	14	0	25	15	50
6 391 61-38 DO YOU USE OR REFER TO N-TYPE SEMICONDUCTOR MATERIAL	33	16	43	14	21	25	50	14	0	25	15	50
6 392 61-39 DO YOU USE OR REFER TO MAJORITY CARRIERS IN SEMICONDUCTORS	14	4	13	5	16	0	17	14	0	0	0	0
6 393 61-40 DO YOU USE OR REFER TO MINORITY CARRIERS IN SEMICONDUCTORS	14	4	13	5	16	0	17	14	0	0	0	0
6 394 61-41 DO YOU USE OR REFER TO JUNCTION RECOMBINATION IN SEMICONDUCTORS	14	0	17	0	11	0	17	7	0	0	0	0
6 395 61-42 DO YOU USE OR REFER TO DEPLETION REGION IN SEMICONDUCTORS	17	4	17	5	16	0	17	14	0	0	0	0
6 396 61-43 DO YOU USE OR REFER TO RELATIONSHIP BETWEEN BARRIER WIDTH AND DIFFERENCE OF POTENTIAL	12	4	13	0	11	25	17	7	0	0	0	50
6 397 61-44 DO YOU USE OR REFER TO THE 10:1 BACK TO FRONT RESISTANCE RATIO FOR DIODES	31	16	30	14	32	35	28	29	0	25	0	0
6 398 61-45 DO YOU USE OR REFER TO BARRIER HEIGHT IN SEMICONDUCTORS	7	4	9	0	5	25	11	7	0	0	0	0
6 399 61-46 DO YOU USE OR REFER TO DIODE SUBSTITUTION INFORMATION	33	24	39	19	26	50	50	14	0	50	0	0
6 400 61-47 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD CURRENT DIODE RATINGS	24	16	22	10	26	50	28	21	0	25	0	0
6 401 61-48 DO YOU USE OR REFER TO PEAK RECURRENT FORWARD CURRENT DIODE RATINGS	24	12	22	5	26	50	28	21	0	25	0	0
6 402 61-49 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT DIODE RATINGS	24	0	22	0	26	50	28	21	0	25	0	0
6 403 61-50 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE DIODE RATINGS	24	0	22	0	26	50	28	21	0	25	0	0
6 404 62-01 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB.	69	60	65	52	74	100	72	71	50	75	31	100
6 405 62-02 DO YOU INSPECT TRANSISTORS	71	56	70	52	74	75	78	71	50	75	31	50
6 406 62-03 DO YOU REMOVE OR REPLACE TRANSISTORS	64	68	70	62	58	100	78	50	50	75	38	100
6 407 62-04 DO YOU CHECK TRANSISTORS USING AN INSTRUMENT	64	68	61	62	68	100	67	64	50	75	38	100
6 408 62-05 DO YOU USE OR REFER TO EMITTER - BASE (EB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	67	72	65	67	68	100	78	64	0	75	44	100
6 409 62-06 DO YOU USE OR REFER TO COLLECTOR - BASE (CB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	69	68	65	62	74	100	78	64	0	100	38	100

TRANSISTORS

PCT HRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

Task Description	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207	SPC 210	SPC 211	SPC 212	SPC 213	SPC 214	SPC 215
G 410 G2-07 DO YOU USE OR REFER TO EMITTER - COLLECTOR (EC) RESISTANCE MEASUREMENTS	69	64	65	62	74	75	78	64	0	100	38	100
G 411 G2-08 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE EMITTER - BASE JUNCTION	38	24	48	24	26	25	56	21	0	25	23	0
G 412 G2-09 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE COLLECTOR - BASE JUNCTION	36	24	43	24	26	25	50	21	0	25	23	0
G 413 G2-10 DO YOU USE OR REFER TO THE PHYSICAL SIZE OF THE TRANSISTOR STRUCTURE (COLLECTOR, BASE AND EMITTER)	48	40	52	43	42	25	56	29	50	75	31	0
G 414 G2-11 DO YOU USE OR REFER TO LEAKAGE CURRENT (ICBO) IN A TRANSISTOR	26	8	30	10	21	0	39	21	0	25	8	0
G 415 G2-12 DO YOU USE OR REFER TO TRANSISTOR SCHEMATIC SYMBOLS	74	64	74	62	74	75	83	64	50	100	38	50
G 416 G2-13 DO YOU USE OR REFER TO TRANSISTOR NOTATION SUCH AS Q1, Q2, Q3, ETC	76	68	74	62	79	100	83	71	50	100	38	100
G 417 G2-14 DO YOU USE OR REFER TO TRANSISTOR SUBSTITUTION INFORMATION	45	32	48	29	42	50	61	29	0	75	23	0
G 418 G2-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE TRANSISTOR BASE CURRENT IS NORMALLY SIGNIFICANTLY SMALLER THAN THE EMITTER CURRENT IE USUALLY IB BEING 2 TO 8 PERCENT OF IC	31	20	39	14	21	50	44	14	0	25	0	0
G 419 G2-16 DO YOU USE THE INFORMATION THAT THE EFFECT OF EMITTER BASE VOLTAGE ON BASE CURRENT IS THE CONTROLLING FACTOR FOR TRANSISTORS	48	32	48	29	47	50	50	43	50	50	15	0
G 420 G2-17 DO YOU USE THE GENERAL RULE THAT LEAKAGE CURRENT (ICBO) IN A TRANSISTOR INCREASES AS TEMPERATURE INCREASES	24	24	22	19	26	50	28	29	0	25	8	0
G 421 G2-18 DO YOU USE OR REFER TO TRANSISTOR CHARACTERISTIC CURVES	17	12	22	5	11	50	28	0	0	25	8	0
G 422 G2-19 DO YOU USE OR REFER TO BETA TRANSISTOR GAINS	21	8	13	5	32	25	17	29	0	25	8	0
G 423 G2-20 DO YOU USE OR REFER TO ALPHA TRANSISTOR GAINS	21	4	13	0	32	25	17	29	0	25	0	0
G 424 G2-21 DO YOU USE OR REFER TO GAMMA TRANSISTOR GAINS	19	4	13	0	26	25	17	21	0	25	0	0
G 425 G2-22 DO YOU CALCULATE BETA TRANSISTOR GAINS	12	4	13	0	11	25	17	7	0	0	0	0
G 426 G2-23 DO YOU CALCULATE ALPHA TRANSISTOR GAINS	12	4	13	0	11	25	17	7	0	0	0	0
G 427 G2-24 DO YOU CALCULATE GAMMA TRANSISTOR GAINS	12	4	13	0	11	25	17	7	0	0	0	0
G 428 G3-01 DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR PRESENT JOB	50	48	43	43	58	75	50	57	0	50	23	50
G 429 G3-02 DO YOU INSPECT TRANSISTOR AMPLIFIERS	30	40	48	38	53	50	56	50	0	50	23	0
G 430 G3-03 DO YOU ALIGN OR ADJUST TRANSISTOR AMPLIFIERS	38	28	26	19	53	75	28	50	0	50	8	50
G 431 G3-04 DO YOU TROUBLESHOOT TO THE AMPLIFIER CIRCUIT LEVEL	55	48	48	43	63	75	56	64	0	50	23	50
G 432 G3-05 DO YOU TROUBLESHOOT TO AMPLIFIER COMPONENTS	45	32	39	24	53	75	44	50	0	50	23	50
G 433 G3-06 DO YOU REMOVE OR REPLACE THE COMPLETE AMPLIFIER	50	44	48	43	53	50	56	50	0	50	23	0
G 434 G3-07 DO YOU REMOVE OR REPLACE AMPLIFIER COMPONENTS	38	36	35	29	42	75	39	36	0	50	23	50
G 435 G3-08 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A CHANGE IN BASE CURRENT	31	16	35	10	26	50	39	21	0	25	8	0
G 436 G3-09 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A SPECIFIC CHANGE IN BASE CURRENT	14	12	17	5	11	50	17	7	0	0	8	0

PCT MBS RESPONDING 'YES' BY SELECTED GRPS

GFSM10 PAGE 17

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

Task ID	Task Description	202	203	204	205	206	207	210	211	212	213	214	215
G 437	63-10 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A CHANGE IN BASE CURRENT	26	20	30	10	21	75	33	14	0	25	0	50
G 438	63-11 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A SPECIFIC CHANGE IN BASE CURRENT	19	0	22	0	16	50	22	14	0	0	0	0
G 439	63-12 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN BASE CURRENT WHICH RESULTS FROM AN INPUT SIGNAL	29	20	39	10	16	75	34	14	0	0	0	50
G 440	63-13 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN BASE CURRENT WHICH RESULTS FROM A SPECIFIC INPUT SIGNAL	17	12	22	5	11	50	28	7	0	0	0	0
G 441	63-14 DO YOU USE THE LOAD-LINE METHOD OF ANALYSIS IN YOUR CIRCUIT ANALYSIS (THIS METHOD REQUIRES YOU TO PLOT A LOAD-LINE ON A TRANSISTOR CHARACTERISTIC CURVE)	5	0	4	5	5	25	6	0	0	0	0	0
G 442	63-15 DO YOU USE OR REFER TO THE OPERATING POINT Q (QUIESCENT POINT) FOR A TRANSISTOR	19	12	17	10	21	25	22	14	0	25	0	50
G 443	63-16 DO YOU CALCULATE THE SPECIFIC QUIESCENT POINT FOR A PARTICULAR TRANSISTOR	10	0	9	0	11	0	11	0	0	25	0	0
G 444	63-17 DO YOU MEASURE VOLTAGE GAIN USED IN THE COMMON EMITTER CONFIGURATION	36	40	39	33	32	75	44	29	0	25	0	50
G 445	63-18 DO YOU MEASURE CURRENT GAIN USED IN THE COMMON EMITTER CONFIGURATION	26	28	26	19	26	75	33	29	0	25	0	50
G 446	63-19 DO YOU MEASURE POWER GAIN USED IN THE COMMON EMITTER CONFIGURATION	26	24	30	14	21	75	39	21	0	25	0	50
G 447	63-20 DO YOU CALCULATE THE VOLTAGE GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE IN BASE-EMITTER VOLTAGE INTO THE CHANGE THE BASE COLLECTOR VOLTAGE TO DETERMINE THE VOLTAGE GAIN	12	0	9	0	16	0	11	14	0	0	0	0
G 448	63-21 DO YOU CALCULATE THE CURRENT GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE IN BASE CURRENT INTO THE CHANGE IN COLLECTOR CURRENT TO DETERMINE THE CURRENT GAIN	10	0	9	0	11	0	11	7	0	0	0	0
G 449	63-22 DO YOU CALCULATE THE POWER GAIN FOR A SPECIFIC TRANSISTOR USING A FORMULA THAT IS, DO YOU MULTIPLY THE CURRENT GAIN TIMES THE VOLTAGE GAIN TO DETERMINE THE POWER GAIN	7	0	9	0	5	0	11	0	0	0	0	0
G 450	63-23 DO YOU NEED TO KNOW THAT MORE COLLECTOR CURRENT IS GENERATED WITH LESS COLLECTOR VOLTAGE AS TEMPERATURE INCREASES (THIS AFFECTS THE STATIC OPERATING POINT EQ3 OF THE TRANSISTOR)	19	4	17	0	21	25	22	21	0	0	0	0
G 451	63-24 DO YOU COMPUTE THE STATIC OPERATING POINT EQ3 OF A TRANSISTOR AT DIFFERENT TEMPERATURES	5	4	9	0	0	25	11	0	0	0	0	0
G 452	63-25 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH EMITTER (SWAMPING) RESISTOR STABILIZATION	33	16	35	14	32	25	39	29	0	25	15	0
G 453	63-26 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH SELF-BIAS STABILIZATION	29	12	26	10	32	25	28	29	0	25	0	0

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

GPSM10 PAGE 10

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task Description	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207	SPC 210	SPC 211	SPC 212	SPC 213	SPC 214	SPC 215
6 454 G3-27 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH THERMISTOR STABILIZATION	31	12	30	10	32	25	33	29	0	25	8	30
6 455 G3-28 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH FORWARD BIAS DIODE STABILIZATION	31	16	35	14	26	25	39	21	0	25	15	0
6 456 G3-29 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH REVERSE BIAS DIODE STABILIZATION	31	16	35	14	26	25	39	21	0	25	15	0
6 457 G3-30 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH DOUBLE DIODE STABILIZATION	26	12	26	10	26	25	28	21	0	25	8	0
6 458 G3-31 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM EMITTER (SWAMPING) RESISTOR STABILIZATION	31	20	26	19	37	25	33	36	0	25	15	0
6 459 G3-32 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM SELF-BIAS STABILIZATION	29	16	26	14	32	25	28	29	0	25	8	0
6 460 G3-33 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THERMISTOR STABILIZATION	33	12	30	14	37	0	33	36	0	25	8	0
6 461 G3-34 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM FORWARD BIAS DIODE STABILIZATION	31	20	35	19	26	25	39	21	0	25	15	0
6 462 G3-35 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM REVERSE BIAS DIODE STABILIZATION	31	20	35	19	26	25	39	21	0	25	15	0
6 463 G3-36 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM DOUBLE DIODE STABILIZATION	24	16	17	14	32	25	17	29	0	25	8	0
6 464 G3-37 DO YOU IDENTIFY AMPLITUDE DISTORTION FOR TRANSISTOR CIRCUITS	33	20	30	14	37	50	33	43	0	0	15	0
6 465 G3-38 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF AMPLITUDE DISTORTION	40	20	43	14	37	50	50	36	0	25	15	0
6 466 G3-39 DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS	33	20	39	14	26	50	44	21	0	25	15	0
6 467 G3-40 DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS	31	16	35	14	26	25	39	21	0	25	15	0
6 468 G3-41 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF PHASE DISTORTION	29	12	35	10	21	25	39	14	0	25	15	0
6 469 G3-42 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF FREQUENCY DISTORTION	31	16	39	10	21	50	44	14	0	25	15	0
6 470 G3-43 DO YOU NEED TO KNOW THE DEGENERATIVE EFFECTS ON THE CIRCUIT CAUSED BY CHANGING EMITTER RESISTANCE FOR TRANSISTOR AMPLIFIERS IN THE COMMON COLLECTOR CONFIGURATION	21	8	17	0	26	50	17	29	0	0	0	0
6 471 G3-44 DO YOU DETERMINE THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS	24	12	30	5	16	50	33	14	0	0	8	0
6 472 G3-45 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	12	12	13	10	11	25	17	7	0	0	8	0
6 473 G3-46 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	33	44	35	43	32	50	39	29	0	25	23	50
6 474 G3-47 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY CIRCUITS	24	16	26	14	21	25	20	14	0	25	8	0
6 475 G3-48 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	26	12	26	10	26	25	28	21	0	25	8	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

Task	202	203	204	205	206	207	210	211	212	213	214	215	SPC
6 476 63-49 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	24	12	22	5	26	50	22	29	0	0	0	0	50
M 477 H1-01 DO YOU USE OR REFER TO VARYACTORS	14	8	13	10	16	0	0	11	0	0	0	0	0
M 478 H1-02 DO YOU USE OR REFER TO TUNNEL DIODES	21	20	22	24	21	0	22	14	0	25	15	0	0
M 479 H1-03 DO YOU USE OR REFER TO FIELD EFFECT TRANSISTORS (FET) DEVICES	50	44	52	43	47	50	61	43	0	50	23	0	0
M 480 H1-04 DO YOU USE OR REFER TO UNIJUNCTION TRANSISTORS	48	52	57	48	37	75	67	36	0	25	31	50	0
M 481 H1-05 DO YOU USE OR REFER TO ZENER DIODES	76	60	78	57	74	75	89	71	50	75	38	50	0
M 482 H1-06 DO YOU USE OR REFER TO INTEGRATED CIRCUITS	74	64	78	57	68	75	89	71	50	50	38	50	0
M 483 H2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH POWER SUPPLIES	74	64	83	57	63	100	83	57	100	75	31	100	0
M 484 H2-02 DO YOU INSPECT POWER SUPPLIES	71	64	74	62	68	75	72	71	100	50	38	50	0
M 485 H2-03 DO YOU CLEAN POWER SUPPLIES	50	44	52	43	47	50	56	50	50	50	23	0	0
M 486 H2-04 DO YOU ALIGN OR ADJUST POWER SUPPLIES	74	48	78	38	68	100	78	71	100	50	23	100	0
M 487 H2-05 DO YOU TROUBLESHOOT TO POWER SUPPLY CIRCUIT LEVEL	62	64	57	57	68	100	61	71	0	50	38	100	0
M 488 H2-06 DO YOU TROUBLESHOOT TO POWER SUPPLY COMPONENTS	55	54	48	48	43	100	56	64	0	50	38	100	0
M 489 H2-07 DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES	71	68	74	62	68	100	78	64	50	75	38	100	0
M 490 H2-08 DO YOU REMOVE OR REPLACE POWER SUPPLY COMPONENTS	50	60	48	52	53	100	54	50	0	50	38	100	0
M 491 H2-09 DO YOU WORK WITH HALF-WAVE RECTIFIERS	52	40	57	33	47	75	67	43	0	50	31	50	0
M 492 H2-10 DO YOU WORK WITH FULL-WAVE RECTIFIERS OTHER THAN BRIDGE RECTIFIERS	57	40	57	43	58	75	67	57	0	50	38	50	0
M 493 H2-11 DO YOU WORK WITH BRIDGE RECTIFIERS	62	60	61	57	63	75	72	64	0	50	38	50	0
M 494 H2-12 DO YOU WORK WITH THREE-PHASE RECTIFIERS	45	44	39	38	53	75	44	43	0	75	23	50	0
M 495 H2-13 DO YOU USE OR REFER TO INPUT VOLTAGE	62	56	65	52	58	75	78	57	0	50	38	50	0
M 496 H2-14 DO YOU USE OR REFER TO INPUT FREQUENCY	50	48	52	48	47	50	67	50	0	50	31	0	0
M 497 H2-15 DO YOU USE OR REFER TO PEAK OUTPUT VOLTAGE	60	48	65	48	53	50	78	50	0	50	38	0	0
M 498 H2-16 DO YOU USE OR REFER TO AVERAGE OUTPUT VOLTAGE	57	60	61	57	53	75	72	57	0	25	38	50	0
M 499 H2-17 DO YOU USE OR REFER TO RIPPLE AMPLITUDE	48	36	48	29	47	75	54	43	0	50	31	50	0
M 500 H2-18 DO YOU USE OR REFER TO RIPPLE FREQUENCY	43	28	39	24	47	50	50	43	0	50	23	0	0
M 501 H2-19 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE	40	24	43	19	37	50	56	36	0	50	15	0	0
M 502 H2-20 DO YOU USE OR REFER TO SHAPE OF OUTPUT WAVEFORMS	62	52	65	48	58	75	78	57	0	50	38	50	0
M 503 H2-21 DO YOU USE OR REFER TO EFFECTIVE OUTPUT VOLTAGE	60	48	61	43	58	75	67	57	50	50	38	50	0
M 504 H2-22 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE FILTERS	45	54	48	52	42	75	50	50	0	0	38	50	0
M 505 H2-23 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE FILTERS	45	52	48	48	42	75	50	50	0	0	31	50	0
M 506 H2-24 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE INPUT L-TYPE FILTERS	33	44	39	38	26	75	44	29	0	0	31	50	0
M 507 H2-25 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE INPUT L-TYPE FILTERS	29	36	35	29	21	75	39	21	0	0	23	50	0
M 508 H2-26 DO YOU WORK WITH CIRCUITS WHICH EMPLOY LC PI-TYPE FILTERS	24	28	30	29	16	25	33	14	0	0	15	0	0
M 509 H2-27 DO YOU WORK WITH CIRCUITS WHICH EMPLOY RC PI-TYPE FILTERS	29	32	30	33	26	25	33	29	0	0	23	0	0
M 510 H2-28 DO YOU WORK WITH CIRCUITS WHICH EMPLOY DON'T REMEMBER WHICH TYPE OF FILTER	40	16	48	19	32	0	50	29	0	50	8	0	0
M 511 H2-29 DO YOU HAVE THE OPTION OF REPLACING ONE TYPE OF FILTER WITH A DIFFERENT TYPE FILTER	7	8	13	5	0	25	17	0	0	0	0	0	0
M 512 H3-01 DO YOU WORK WITH OSCILLATORS IN YOUR PRESENT JOB	40	28	43	19	37	75	50	36	0	28	15	50	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

OSCILLATORS

DY-TSK

	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207	SPC 210	SPC 211	SPC 212	SPC 213	SPC 214	SPC 215
M 513 M3-02 DO YOU INSPECT OSCILLATORS	36	20	39	14	37	50	39	36	0	25	15	0
M 514 M3-03 DO YOU ALIGN OR ADJUST OSCILLATORS	33	24	35	14	32	75	39	29	0	25	8	50
M 515 M3-04 DO YOU REMOVE OR REPLACE COMPLETE OSCILLATORS	43	24	43	19	42	50	50	43	0	25	15	0
M 516 M3-05 DO YOU REMOVE OR REPLACE OSCILLATOR COMPONENTS	24	24	13	14	37	75	17	36	0	25	15	50
M 517 M3-06 DO YOU TROUBLESHOOT TO OSCILLATOR CIRCUIT LEVEL	40	24	39	19	42	50	44	43	0	25	15	0
M 518 M3-07 DO YOU TROUBLESHOOT TO OSCILLATOR COMPONENTS	21	24	13	14	32	75	17	29	0	25	15	50
M 519 M3-08 DO YOU USE OR REFER TO FEEDBACK	43	28	43	19	42	75	50	43	0	25	15	50
M 520 M3-09 DO YOU USE OR REFER TO FREQUENCY DETERMINING DEVICES (FDD)	29	28	22	19	37	75	28	36	0	25	15	50
M 521 M3-10 DO YOU USE OR REFER TO AMPLITUDE STABILITY	40	16	39	10	42	50	39	43	50	25	15	0
M 522 M3-11 DO YOU USE OR REFER TO FREQUENCY STABILITY	45	16	48	10	42	50	50	43	50	25	15	0
M 523 M3-12 DO YOU USE OR REFER TO DAMPING	31	20	26	14	37	50	28	36	0	25	15	0
M 524 M3-13 DO YOU USE OR REFER TO REGENERATIVE FEEDBACK	38	28	35	19	42	75	39	43	0	25	15	50
M 525 M3-14 DO YOU USE OR REFER TO PIEZOELECTRIC EFFECT	14	20	9	14	21	50	11	21	0	0	15	0
M 526 M3-15 DO YOU USE OR REFER TO CRITICAL DAMPING	17	12	17	5	16	50	22	14	0	25	8	0
M 527 M3-16 DO YOU USE OR REFER TO UNDER DAMPING	19	16	17	10	16	50	22	14	0	25	8	0
M 528 M3-17 DO YOU USE OR REFER TO OVER DAMPING	17	16	17	10	16	50	22	14	0	25	8	0
M 529 M3-18 DO YOU WORK WITH OSCILLATORS WHICH USE LC TANK CIRCUITS AS FDD	24	28	26	19	21	75	28	14	0	25	15	50
M 530 M3-19 DO YOU WORK WITH OSCILLATORS WHICH USE RC NETWORKS AS FDD	31	24	35	14	26	75	39	21	0	25	15	50
M 531 M3-20 DO YOU WORK WITH OSCILLATORS WHICH USE CRYSTALS AS FDD	36	4	39	0	32	25	44	29	0	25	0	0
M 532 M3-21 DO YOU WORK WITH OSCILLATORS WHICH USE DON'T REMEMBER WHICH TYPE OF FDD	12	8	22	5	0	25	22	0	0	0	0	0
M 533 M3-22 DO YOU WORK WITH SERIES HARTLEY SINUSOIDAL OSCILLATORS	17	12	17	5	16	50	17	14	0	0	0	0
M 534 M3-23 DO YOU WORK WITH SHUNT HARTLEY SINUSOIDAL OSCILLATORS	17	4	17	0	16	25	17	14	0	0	0	0
M 535 M3-24 DO YOU WORK WITH COLPITTS SINUSOIDAL OSCILLATORS	12	8	9	5	16	25	11	14	0	0	0	0
M 536 M3-25 DO YOU WORK WITH CLAPP SINUSOIDAL OSCILLATORS	10	8	9	5	11	25	6	7	0	0	0	0
M 537 M3-26 DO YOU WORK WITH BUTLER SINUSOIDAL OSCILLATORS	5	8	4	5	5	25	0	7	0	0	0	0
M 538 M3-27 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF OSCILLATORS	29	16	35	10	21	50	39	21	0	25	0	50

	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207	SPC 210	SPC 211	SPC 212	SPC 213	SPC 214	SPC 215
I 539 I1-01 DO YOU WORK WITH MULTIVIBRATORS IN YOUR PRESENT JOB	45	40	52	33	37	75	61	36	0	25	15	50
I 540 I1-02 DO YOU INSPECT WAVE GENERATING OR SHAPING CIRCUITS	40	24	43	19	37	50	50	36	0	25	15	0
I 541 I1-03 DO YOU ALIGN OR ADJUST WAVE GENERATING OR SHAPING CIRCUITS	36	32	39	24	32	75	44	29	0	25	15	50

MULTIVIBRATORS

I 542 I1-04 DO YOU CALIBRATE WAVE GENERATING OR SHAPING CIRCUITS	29	24	30	19	26	50	33	21	0	25	15	0
I 543 I1-05 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUITS	43	28	48	24	37	50	56	36	0	25	15	0
I 544 I1-06 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUIT COMPONENTS	36	28	39	19	32	75	44	29	0	25	15	50
I 545 I1-07 DO YOU REMOVE OR REPLACE COMPLETE WAVE GENERATING OR SHAPING CIRCUITS	43	28	48	24	37	50	56	36	0	25	15	0
I 546 I1-08 DO YOU REMOVE OR REPLACE WAVE GENERATING OR SHAPING COMPONENTS	33	28	35	19	32	75	39	29	0	25	15	50
I 547 I1-09 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK CIRCUITS	26	28	30	19	21	75	33	14	0	25	15	50

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DI-TSK	202	203	204	205	206	207	210	211	212	213	214	215
I 586 13-22 DO YOU CALCULATE ACTUAL VALUES OF TRIODE AMPLIFICATION FACTORS	0	0	0	0	0	0	0	0	0	0	0	0
I 587 13-23 DO YOU USE OR REFER TO MULTIGRID (TETRODE, PENTODE, ETC) AMPLIFICATION FACTORS	2	0	0	0	5	0	0	0	0	0	0	0
I 588 13-24 DO YOU USE OR REFER TO ELECTRON TUBE TRANSDUCTANCE (G, WHICH IS MEASURED IN MHOS)	0	0	0	0	0	0	0	0	0	0	0	0
I 589 13-25 DO YOU CALCULATE ACTUAL VALUES OF ELECTRON TUBE TRANSDUCTANCES	0	0	0	0	0	0	0	0	0	0	0	0
I 590 13-26 DO YOU USE OR REFER TO THE ELECTRON TUBE PARAMETER CALLED AC PLATE RESISTANCE	0	0	0	0	0	0	0	0	0	0	0	0
I 591 13-27 DO YOU CALCULATE ACTUAL VALUES OF AC PLATE RESISTANCE	0	0	0	0	0	0	0	0	0	0	0	0
I 592 13-28 DO YOU USE OR REFER TO ELECTRON TUBE INTERELECTRODE CAPACITY	2	0	0	0	5	0	0	0	0	0	0	0
I 593 13-29 DO YOU USE OR REFER TO CHARACTERISTIC CURVES IN YOUR WORK WITH ELECTRON TUBES	0	0	0	0	0	0	0	0	0	0	0	0
I 594 13-30 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE VOLTAGE FOR A SPECIFIED BIAS	0	4	0	0	0	25	0	0	0	0	0	0
I 595 13-31 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE CURRENT FOR A SPECIFIED BIAS	0	4	0	0	0	25	0	0	0	0	0	0
I 596 13-32 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR CUTOFF	2	4	4	0	0	25	6	0	0	0	0	0
I 597 13-33 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR SATURATION	2	4	4	0	0	25	6	0	0	0	0	0
I 598 13-34 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER GAIN	5	0	4	0	5	0	6	0	0	25	0	0
I 599 13-35 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER EFFICIENCY	2	0	4	0	0	0	6	0	0	0	0	0
I 600 13-36 DO YOU USE TEST TUBE CHECKERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	2	0	4	0	0	0	6	0	0	0	0	0
I 601 13-37 DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	0	0	0	0	0	0	0	0	0	0	0	0
I 602 13-38 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	2	0	4	0	0	0	6	0	0	0	0	0
I 603 13-39 DO YOU USE CHARACTERISTIC CURVES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	0	0	0	0	0	0	0	0	0	0	0	0
I 604 13-40 DO YOU CALCULATE ANY ELECTRON TUBE CAPACITANCES SUCH AS INPUT CAPACITANCE	0	0	0	0	0	0	0	0	0	0	0	0
I 605 13-41 DO YOU USE OR REFER TO TUBE SOCKET NOTATION	5	0	4	0	5	0	6	0	0	0	0	0
I 606 13-42 DO YOU USE OR REFER TO PIN NUMBERING SYSTEMS	10	0	9	0	11	0	11	0	0	25	0	0
I 607 13-43 DO YOU USE OR REFER TO THE TYPE OF MATERIAL OR THE OPERATING TEMPERATURE OF THE EMITTING SURFACE IN THE ELECTRON TUBES YOU WORK ON	0	0	0	0	0	0	0	0	0	0	0	0
I 608 13-44 DO YOU USE OR REFER TO TUBE SUBSTITUTION MATERIAL SUCH AS MANUALS OR CHARTS	0	0	0	0	0	0	0	0	0	0	0	0
J 609 JI-01 DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS IN YOUR PRESENT JOB	2	0	0	0	5	0	0	0	0	25	0	0
J 610 JI-02 DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS	0	0	0	0	0	0	0	0	0	0	0	0

ELECTRON TUBE AMPLIFIERS
AND CIRCUITS

PCT MBS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

OY-TSK

SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219

J 611	J1-03	DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
J 612	J1-04	DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
J 613	J1-05	DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
J 614	J1-06	DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
J 615	J1-07	DO YOU TROUBLESHOOT OR REPAIR DON'T KNOW WHICH TYPE OF AMPLIFIER	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0
J 616	J2-01	DO YOU WORK WITH GAS TUBES THAT CATHODE OR COLD CATHODE?	5	0	9	0	0	0	11	0	0	0	0	0	0	0	0
J 617	J2-02	DO YOU WORK WITH CATHODE-RAY TUBES	26	12	24	10	24	25	28	14	50	50	0	0	0	0	0
J 618	J2-03	DO YOU USE OR REFER TO THE CHARACTERISTICS OF BEAM POWER TUBES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
J 619	J2-04	DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH BEAM POWER TUBES ARE USED	2	0	4	0	0	0	0	0	50	0	0	0	0	0	0
J 620	J2-05	DO YOU USE OR REFER TO THE CHARACTERISTICS OF (HYRATHONS)	2	0	0	0	5	0	0	0	25	0	0	0	0	0	0
J 621	J2-06	DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH THYRATRONS ARE USED	5	0	0	0	11	0	0	0	25	0	0	0	0	0	0
J 622	J2-07	DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTRON GUNS OF CATHODE-RAY TUBES (CRT)	19	12	17	10	21	25	22	14	0	25	0	0	0	0	0
J 623	J2-08	DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROMAGNETIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)	17	4	13	0	21	25	17	14	0	25	0	0	0	0	0
J 624	J2-09	DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)	17	4	13	0	21	25	17	14	0	25	0	0	0	0	0
J 625	J2-10	DO YOU USE OR REFER TO PHOSPHOR SCREENS	14	4	13	0	16	25	17	14	0	0	0	0	0	0	0
J 626	J2-11	DO YOU USE OR REFER TO AQUADAG COATINGS	5	0	4	0	5	0	4	0	0	0	0	0	0	0	0
J 627	J2-12	DO YOU USE OR REFER TO ELECTRON OPTICS	14	4	9	0	21	25	11	14	0	25	0	0	0	0	0
J 628	J2-13	DO YOU USE OR REFER TO PERSISTENCE	0	4	0	0	0	25	0	0	0	0	0	0	0	0	0
J 629	J2-14	DO YOU USE OR REFER TO DECAY TIMES	2	4	0	0	5	25	0	0	0	25	0	0	0	0	0
J 630	J2-15	DO YOU USE OR REFER TO FLUORESCENCE	2	0	4	0	0	0	0	6	0	0	0	0	0	0	0
J 631	J2-16	DO YOU USE OR REFER TO PHOSPHORESCENCE	5	4	9	0	0	25	11	0	0	0	0	0	0	0	0
J 632	J3-01	DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	21	0	24	0	16	0	17	7	100	25	0	0	0	0	0
J 633	J3-02	DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	17	0	22	0	16	0	11	7	50	25	0	0	0	0	0
J 634	J3-03	DO YOU PERFORM TASKS ON FREQUENCY MIXERS	19	0	17	0	16	0	6	7	50	25	0	0	0	0	0
J 635	J3-04	DO YOU USE OR REFER TO THE HETERODYNING OF SIGNALS IN YOUR WORK WITH TRANSMIT OR RECEIVE SYSTEMS	2	0	0	0	5	0	0	0	0	25	0	0	0	0	0
J 636	J3-05	DO YOU PERFORM TASKS ON REACTANCE MODULATORS	7	0	9	0	5	0	4	0	0	25	0	0	0	0	0
J 637	J3-06	DO YOU PERFORM TASKS ON MODULATED OSCILLATORS	10	0	13	0	5	0	11	0	0	25	0	0	0	0	0
K 638	K1-01	DO YOU WORK ON AM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
K 639	K1-02	DO YOU INSPECT AM TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
K 640	K1-03	DO YOU CLEAN AM TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
K 641	K1-04	DO YOU ALIGN OR ADJUST AM TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM SYSTEMS

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

BY-TSK	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207	SPC 210	SPC 211	SPC 212	SPC 213	SPC 214	SPC 215
K 642 KI-05 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	0	0	0	0	0	0
K 643 KI-06 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE COMPONENTS	0	0	0	0	0	0	0	0	0	0	0	0
K 644 KI-07 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	0	0	0	0	0	0	0	0
K 645 KI-08 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE COMPONENTS	0	0	0	0	0	0	0	0	0	0	0	0
K 646 KI-09 DO YOU PERFORM TASKS ON RF OSCILLATORS	0	0	0	0	0	0	0	0	0	0	0	0
K 647 KI-10 DO YOU PERFORM TASKS ON RF AMPLIFIERS	0	0	0	0	0	0	0	0	0	0	0	0
K 648 KI-11 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	0	0	0	0	0	0	0	0	0	0	0	0
K 649 KI-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS	0	0	0	0	0	0	0	0	0	0	0	0
K 650 KI-13 DO YOU PERFORM TASKS ON LOCAL OSCILLATORS	0	0	0	0	0	0	0	0	0	0	0	0
K 651 KI-14 DO YOU PERFORM TASKS ON IF AMPLIFIERS	0	0	0	0	0	0	0	0	0	0	0	0
K 652 KI-15 DO YOU PERFORM TASKS ON DETECTORS	0	0	0	0	0	0	0	0	0	0	0	0
K 653 KI-16 DO YOU PERFORM TASKS ON DON'T REMEMBER WHICH AM STAGE TRANSMITTERS	0	0	0	0	0	0	0	0	0	0	0	0
K 654 KI-17 DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN TRANSMITTERS	0	0	0	0	0	0	0	0	0	0	0	0
K 655 KI-18 DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN TRANSMITTERS	0	0	0	0	0	0	0	0	0	0	0	0
K 656 KI-19 DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS	2	0	4	0	0	0	0	0	0	0	0	0
K 657 KI-20 DO YOU USE OR REFER TO SELECTIVITY OF RECEIVERS	0	0	0	0	0	0	0	0	0	0	0	0
K 658 KI-21 DO YOU USE OR REFER TO 2ND HARMONIC DISTORTION	0	0	0	0	0	0	0	0	0	0	0	0
K 659 KI-22 DO YOU USE OR REFER TO BANDPASS DISTORTION	0	0	0	0	0	0	0	0	0	0	0	0
K 660 KI-23 DO YOU USE OR REFER TO SQUARE LAW DISTORTION	0	0	0	0	0	0	0	0	0	0	0	0
K 661 KI-24 DO YOU USE OR REFER TO CO-CHANNEL INTERFERENCE	0	0	0	0	0	0	0	0	0	0	0	0
K 662 KI-25 DO YOU USE OR REFER TO IMAGE FREQUENCIES IN RECEIVERS	0	0	0	0	0	0	0	0	0	0	0	0
K 663 KI-26 DO YOU USE OR REFER TO SIGNAL TO IMAGE RATIOS OR IMAGE REJECTION RATIOS	0	0	0	0	0	0	0	0	0	0	0	0
K 664 KI-27 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM TRANSMITTER SCHEMATIC DIAGRAMS	0	0	0	0	0	0	0	0	0	0	0	0
K 665 KI-28 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM RECEIVER SCHEMATIC DIAGRAMS	0	0	0	0	0	0	0	0	0	0	0	0
K 666 K2-01 DO YOU WORK WITH FM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	2	0	0	0	0	5	0	0	0	0	0	0
K 667 K2-02 DO YOU INSPECT FM TRANSMIT OR RECEIVE SYSTEMS	2	0	0	0	0	5	0	0	0	0	0	0
K 668 K2-03 DO YOU CLEAN FM TRANSMIT OR RECEIVE SYSTEMS	2	0	0	0	0	5	0	0	0	0	0	0
K 669 K2-04 DO YOU ALIGN FM TRANSMIT OR RECEIVE SYSTEMS	2	0	0	0	0	5	0	0	0	0	0	0
K 670 K2-05 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE SYSTEMS	2	0	0	0	0	5	0	0	0	0	0	0
K 671 K2-06 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE COMPONENTS	2	0	0	0	0	5	0	0	0	0	0	0
K 672 K2-07 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE SYSTEMS	2	0	0	0	0	5	0	0	0	0	0	0
K 673 K2-08 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE COMPONENTS	2	0	0	0	0	5	0	0	0	0	0	0
K 674 K2-09 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	2	0	0	0	0	5	0	0	0	0	0	0
K 675 K2-10 DO YOU PERFORM TASKS ON FREQUENCY MULTIPLIERS	2	0	0	0	0	5	0	0	0	0	0	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

BY-TSK

TASK	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207	SPC 210	SPC 211	SPC 212	SPC 213	SPC 214	SPC 215
K 676 K2-11 DO YOU PERFORM TASKS ON DRIVERS (INTERMEDIATE AMPLIFIERS)	2	0	0	0	5	0	0	0	0	0	0	0
K 677 K2-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS	2	0	0	0	5	0	0	0	0	0	0	0
K 678 K2-13 DO YOU PERFORM TASKS ON RF AMPLIFIERS	2	0	0	0	5	0	0	0	0	0	0	0
K 679 K2-14 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	2	0	0	0	5	0	0	0	0	0	0	0
K 680 K2-15 DO YOU PERFORM TASKS ON IF AMPLIFIERS	2	0	0	0	5	0	0	0	0	0	0	0
K 681 K2-16 DO YOU PERFORM TASKS ON LIMITERS	2	0	0	0	5	0	0	0	0	0	0	0
K 682 K2-17 DO YOU PERFORM TASKS ON FREQUENCY DISCRIMINATORS	2	0	0	0	5	0	0	0	0	0	0	0
K 683 K2-18 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSMITTERS	2	0	0	0	5	0	0	0	0	0	0	0
K 684 K2-19 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM RECEIVERS	2	0	0	0	5	0	0	0	0	0	0	0
K 685 K3-01 DO YOU CONVERT DECIMAL (BASE 10) NUMBERS TO OCTAL (BASE 8) NUMBERS	10	4	13	0	5	25	11	0	0	0	0	0
K 686 K3-02 DO YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2) NUMBERS	38	16	61	10	11	50	61	7	50	0	0	0
K 687 K3-03 DO YOU CONVERT OCTAL NUMBERS TO DECIMAL NUMBERS	14	4	17	0	11	25	17	7	0	0	0	0
K 688 K3-04 DO YOU CONVERT OCTAL NUMBERS TO BINARY NUMBERS	12	4	17	0	5	25	17	0	0	0	0	0
K 689 K3-05 DO YOU CONVERT BINARY NUMBERS TO DECIMAL NUMBERS	38	12	61	5	11	50	67	7	0	0	0	0
K 690 K3-06 DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS	14	4	17	0	11	25	22	7	0	0	0	0
K 691 K3-07 DO YOU ADD BINARY NUMBERS TO GET A SUM	33	12	52	5	11	50	61	7	0	0	0	0
K 692 K3-08 DO YOU SUBTRACT BINARY NUMBERS USING THE END-AROUND-CARRY METHOD	21	0	30	0	11	0	33	7	0	0	0	0
K 693 K3-09 DO YOU SUBTRACT BINARY NUMBERS USING THE DIRECT SUBTRACTION METHOD	24	8	35	0	11	50	44	7	0	0	0	0
K 694 K3-10 DO YOU ADD OCTAL NUMBERS TO GET A SUM	12	4	17	0	5	25	22	0	0	0	0	0
L 695 L1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO LOGIC FUNCTIONS	52	32	52	33	53	25	67	57	0	25	8	0
L 696 L1-02 DO YOU CONSTRUCT TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES	45	8	48	5	42	25	61	43	0	25	8	0
L 697 L1-03 DO YOU CONSTRUCT TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES	45	8	48	5	42	25	61	43	0	25	8	0
L 698 L1-04 DO YOU CONSTRUCT TRUTH TABLES FOR AND OR LOGIC SYMBOLS WITH STATE INDICATORS	45	8	48	5	42	25	61	43	0	25	8	0
L 699 L1-05 DO YOU CONSTRUCT TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS OR GATES	43	8	48	5	37	25	61	34	0	25	8	0
L 700 L1-06 DO YOU USE OR REFER TO TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES	48	16	52	14	42	25	67	43	0	25	8	0
L 701 L1-07 DO YOU USE OR REFER TO TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES	48	16	52	14	42	25	67	43	0	25	8	0
L 702 L1-08 DO YOU USE OR REFER TO TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS	43	16	48	14	37	25	61	43	0	0	0	0
L 703 L1-09 DO YOU USE OR REFER TO TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS	45	16	48	14	42	25	61	43	0	25	8	0
L 704 L1-10 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR AND GATES	55	28	52	29	58	25	67	64	0	25	8	0
L 705 L1-11 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR OR GATES	55	28	52	29	58	25	67	64	0	25	8	0
L 706 L1-12 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR NAND OR NOR GATES	50	32	48	33	53	25	61	57	0	25	8	0

NUMBERING SYSTEMS

LOGIC FUNCTIONS

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

GPSM10 PAGE 27

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207	SPC 210	SPC 211	SPC 212	SPC 213	SPC 214	SPC 215
L 733 L3-01 DO YOU WORK WITH DIGITAL COUNTERS IN YOUR PRESENT JOB	55	52	48	52	63	50	50	64	50	50	31	0
L 734 L3-02 DO YOU USE OR REFER TO UP-COUNTERS	48	40	43	38	53	50	50	43	50	75	31	0
L 735 L3-03 DO YOU USE OR REFER TO DOWN-COUNTERS	43	32	43	29	42	50	50	36	50	50	23	0
L 736 L3-04 DO YOU USE OR REFER TO SERIAL COUNTERS	40	16	43	14	37	28	56	43	0	0	15	0
L 737 L3-05 DO YOU USE OR REFER TO PARALLEL COUNTERS	31	12	26	14	37	0	33	43	0	0	8	0
L 738 L3-06 DO YOU USE OR REFER TO RING COUNTERS	17	0	9	0	24	0	11	29	0	0	0	0
L 739 L3-07 DO YOU USE OR REFER TO DECADE COUNTERS	24	28	30	29	14	28	39	21	0	0	15	0
L 740 L3-08 DO YOU USE OR REFER TO COUNT DETECT CIRCUITS	33	20	30	14	37	50	39	29	0	50	8	0
L 741 L3-09 DO YOU USE OR REFER TO DOWN CLOCKS	45	20	43	19	47	28	50	43	50	50	8	0
L 742 L3-10 DO YOU USE OR REFER TO UP CLOCKS	45	20	43	19	47	28	50	43	50	50	8	0
L 743 L3-11 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	36	24	43	19	24	50	56	21	0	25	8	0
L 744 L3-12 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-FLOPS	29	8	39	5	16	25	50	14	0	0	0	0
L 745 L3-13 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF DECADE COUNTERS	24	12	30	14	16	0	39	14	0	0	0	0
L 746 L3-14 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF RING COUNTERS	14	0	13	0	16	0	17	14	0	0	0	0
L 747 L3-15 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER	29	0	35	0	21	0	44	21	0	0	0	0
L 748 L3-16 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	29	8	30	10	26	0	39	21	0	25	0	0
L 749 L3-17 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF COUNTERS	26	16	35	14	16	25	44	14	0	0	15	0
L 750 L3-18 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	24	16	26	10	21	50	33	7	0	50	0	0
L 751 L3-19 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-FLOPS	17	4	22	0	11	25	28	7	0	0	0	0
L 752 L3-20 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER	17	0	22	0	11	0	28	7	0	0	0	0
L 753 L3-21 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR OTHER TYPES OF COUNTERS	26	20	35	19	16	25	33	7	50	25	15	0
L 754 L3-22 DO YOU CONSTRUCT TRUTH TABLES FROM LOGIC DIAGRAMS OF DECADE COUNTERS	14	0	17	0	11	0	23	14	0	0	0	0
L 755 L3-23 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP IN RING COUNTERS FOR SPECIFIC INPUT PULSES	14	0	9	0	21	0	11	21	0	0	0	0
L 756 L3-24 DO YOU DETERMINE THE APPROPRIATE AND GATE NECESSARY IN COUNT DETECT CIRCUITS TO INDICATE A REQUIRED COUNT	31	20	35	19	26	25	44	21	0	25	8	0
M 757 HI-01 DO YOU WORK WITH SAWTOOTH WAVE GENERATORS	60	24	52	19	68	50	61	71	0	50	15	0
M 758 HI-02 DO YOU WORK WITH TRAPEZOIDAL WAVE GENERATORS	21	12	22	10	21	25	28	21	0	0	15	0
M 759 HI-03 DO YOU WORK WITH PULSED OSCILLATORS WITH REGENERATIVE FEEDBACK	43	28	43	24	42	50	50	43	0	25	15	0
M 760 HI-04 DO YOU WORK WITH PULSED OSCILLATORS WITHOUT REGENERATIVE FEEDBACK	38	16	34	14	37	25	44	36	0	25	15	0

TIMING CIRCUITS

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK	SPC											
	202	203	204	205	206	207	210	211	212	213	214	215
M 761 M1-05 DO YOU WORK WITH BLOCKING OSCILLATORS	38	32	39	24	37	75	44	36	0	25	23	50
M 762 M1-06 DO YOU USE OR REFER TO RISE TIME	62	28	61	24	63	50	61	64	100	50	15	0
M 763 M1-07 DO YOU USE OR REFER TO FALL OR FLYBACK TIME	60	20	61	14	58	50	61	50	100	75	15	0
M 764 M1-08 DO YOU USE OR REFER TO SWEEP TIME	71	40	65	38	79	50	67	79	100	75	31	0
M 765 M1-09 DO YOU USE OR REFER TO ELECTRICAL LENGTH OF SAWTOOTH WAVEFORMS	67	12	57	5	79	50	67	86	0	50	8	0
M 766 M1-10 DO YOU USE OR REFER TO PHYSICAL LENGTH OF SAWTOOTH WAVEFORMS	60	12	57	5	63	50	67	64	0	50	8	0
M 767 M1-11 DO YOU USE OR REFER TO LINEAR SLOPE OF SAWTOOTH WAVEFORMS	57	24	57	19	58	50	67	57	0	50	15	0
M 768 M1-12 DO YOU USE OR REFER TO GATE LENGTH OF SAWTOOTH WAVEFORMS	55	24	52	19	58	50	61	57	0	50	15	0
M 769 M2-01 DO YOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB	33	8	35	5	32	25	39	14	0	75	8	50
M 770 M2-02 DO YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL GENERATORS	29	8	30	5	26	25	33	7	0	75	8	50
M 771 M2-03 DO YOU PERFORM PERIODIC MAINTENANCE SUCH AS ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL GENERATORS	4	30	0	0	21	25	33	7	0	50	0	50
M 772 M2-04 DO YOU TROUBLESHOOT TO AN ASSEMBLY OR SUBASSEMBLY WHILE USING SIGNAL GENERATORS	26	4	26	0	26	25	28	7	0	75	0	50
M 773 M2-05 DO YOU TROUBLESHOOT TO THE SMALLEST REPLACEABLE COMPONENT WHILE USING SIGNAL GENERATORS	19	4	22	0	16	25	22	0	0	50	0	50
M 774 M2-06 DO YOU USE AUDIO SINE-WAVE GENERATORS	7	4	9	5	5	0	11	0	0	0	0	0
M 775 M2-07 DO YOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH AS SQUARE WAVE, TRIANGLE, PULSE, OR SPIKE	14	0	13	0	16	0	17	7	0	25	0	0
M 776 M2-08 DO YOU USE RF GENERATORS LESS THAN 1,000 MH	24	4	22	0	26	25	22	21	0	50	0	50
M 777 M2-09 DO YOU USE RF GENERATORS GREATER THAN 1,000 MH	17	0	17	0	16	0	17	7	0	50	0	0
M 778 M2-10 DO YOU USE OTHER SPECIAL PURPOSE OR MULTI-FUNCTION GENERATORS	17	0	17	0	16	0	17	0	0	75	0	0
M 779 M3-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS OR GENERATORS	29	64	30	62	26	75	33	14	0	50	38	50
M 780 M3-02 DO YOU INSPECT MOTORS	31	60	35	52	26	100	39	14	0	50	31	100
M 781 M3-03 DO YOU CLEAN OR LUBRICATE MOTORS	29	48	30	48	26	50	33	14	0	50	23	0
M 782 M3-04 DO YOU OPERATE MOTORS	33	64	39	57	26	100	39	14	0	50	31	100
M 783 M3-05 DO YOU REMOVE OR REPLACE COMPLETE MOTORS	31	64	35	57	26	100	39	14	0	50	31	100
M 784 M3-06 DO YOU REMOVE OR REPLACE MOTOR PARTS	14	40	17	38	11	50	22	7	0	25	15	0
M 785 M3-07 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF MOTORS	31	68	35	62	26	100	39	14	0	50	38	100
M 786 M3-08 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS	19	28	22	24	16	50	22	14	0	0	8	0
M 787 M3-09 DO YOU PERFORM ANY TASKS ON FIELD COILS	7	8	4	5	11	25	6	7	0	25	0	0
M 788 M3-10 DO YOU PERFORM ANY TASKS ON ARMATURES	5	12	4	10	5	25	6	7	0	0	0	0
M 789 M3-11 DO YOU PERFORM ANY TASKS ON ROTORS	5	12	4	10	5	25	6	7	0	0	0	0
M 790 M3-12 DO YOU PERFORM ANY TASKS ON BRUSHES	5	44	4	43	5	50	6	7	0	0	23	0
M 791 M3-13 DO YOU PERFORM ANY TASKS ON SLIP RINGS	2	40	4	43	0	25	6	0	0	0	23	0
M 792 M3-14 DO YOU PERFORM ANY TASKS ON COMMUTATORS	2	24	4	24	0	25	6	0	0	0	8	0
M 793 M3-15 DO YOU PERFORM ANY TASKS ON POLE PIECES	2	12	4	10	0	25	6	0	0	0	0	0

MOTORS AND GENERATORS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DI-TSK	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207	SPC 210	SPC 211	SPC 212	SPC 213	SPC 214	SPC 215
M 794 M3-16 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OF THE FORCE OR TORQUE CREATED BY A MOTOR	17	12	17	10	16	25	17	7	0	50	0	0
M 795 M3-17 DO YOU DETERMINE OR MEASURE THE DIRECTION OF THE MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR	21	24	17	14	24	75	17	14	0	50	8	50
M 796 M3-18 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OR DIRECTION OF THE INDUCED VOLTAGE IN MOTORS	12	24	4	19	21	50	6	14	0	50	0	50
M 797 M3-19 DO YOU WORK WITH SYNCHRONOUS MOTORS	31	28	35	29	26	25	39	14	0	50	15	0
M 798 M3-20 DO YOU WORK WITH INDUCTION MOTORS	21	36	22	33	21	50	22	14	0	25	23	0
M 799 M3-21 DO YOU WORK WITH SPLIT-PHASE MOTORS	19	24	22	19	16	50	22	7	0	25	15	0
M 800 M3-22 DO YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS	24	52	26	52	21	50	28	14	0	25	23	50
M 801 M3-23 DO YOU INSPECT GENERATORS	19	20	17	14	21	50	22	7	0	50	0	0
M 802 M3-24 DO YOU CLEAN OR LUBRICATE GENERATORS	14	20	9	14	21	50	11	7	0	50	0	0
M 803 M3-25 DO YOU OPERATE GENERATORS	21	16	22	10	21	50	28	7	0	50	0	0
M 804 M3-26 DO YOU REMOVE OR REPLACE COMPLETE GENERATORS	14	20	13	14	16	50	17	7	0	25	0	0
M 805 M3-27 DO YOU REMOVE OR REPLACE GENERATOR PARTS	7	12	9	5	5	50	11	0	0	25	0	0
M 806 M3-28 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF GENERATORS	14	32	13	24	16	75	17	7	0	25	15	50
M 807 M3-29 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF GENERATORS	5	12	4	5	5	50	6	0	0	25	0	0
M 808 N1-01 DO YOU WORK WITH METERS IN YOUR PRESENT JOB	67	72	61	67	74	100	54	71	50	75	46	100
M 809 N1-02 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF PERMANENT MAGNETS	14	12	17	14	11	U	17	14	0	0	15	0
M 810 N1-03 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF MOVING COILS	17	12	17	14	16	U	17	21	U	U	15	U
M 811 N1-04 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF SPIRAL SPRINGS	10	8	9	10	11	0	6	14	0	0	15	0
M 812 N1-05 DO YOU READ METER SCALES	74	72	70	67	79	100	67	79	100	75	46	100
M 813 N1-06 DO YOU EXTEND THE RANGE OF AMMETERS	38	32	30	24	47	75	33	43	0	50	15	50
M 814 N1-07 DO YOU ZERO OHMMETERS	76	68	74	62	79	100	67	79	100	75	38	100
M 815 N1-08 DO YOU ZERO VOLTMETERS	50	32	48	19	53	100	44	57	50	25	23	100
M 816 N1-09 DO YOU EXTEND THE RANGE OF VOLTMETERS	45	44	43	33	47	100	50	43	0	50	15	100
M 817 N1-10 DO YOU USE OR REFER TO VOLTMETER SENSITIVITY (EXPRESSED IN UNITS OF OHMS PER VOLT)	43	28	43	19	42	75	50	43	0	25	15	50
M 818 N2-01 DO YOU WORK WITH SATURABLE REACTORS OR MAGNETIC AMPLIFIERS IN YOUR PRESENT JOB	5	4	4	5	5	0	6	0	0	0	0	0
M 819 N2-02 DO YOU INSPECT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	5	4	4	5	5	0	6	0	0	0	0	0
M 820 N2-03 DO YOU CLEAN MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	0	4	0	5	0	U	0	0	0	0	0	0
M 821 N2-04 DO YOU ADJUST MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	0	0	0	0	0	0	0	0	0	0	0	0
M 822 N2-05 DO YOU TROUBLESHOOT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	5	0	4	0	5	0	6	0	0	0	0	0
M 823 N2-06 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	5	0	4	0	5	0	6	0	0	0	0	0
M 824 N2-07 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIER OR SATURABLE REACTOR COMPONENTS	2	0	0	0	5	0	0	0	0	0	0	0

METER MOVEMENTS

SATURABLE REACTORS AND MAGNETIC AMPLIFIERS

PCT MBRs RESPONDING 'YES' BY SELECTED GRPS

GPSM10 PAGE 32

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task ID	Task Description	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207	SPC 210	SPC 211	SPC 212	SPC 213	SPC 214	SPC 215
0 889	02-15 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER SUPPLIES	10	0	13	0	5	0	17	0	0	0	0	0
0 890	02-16 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM CHARGING CHOKES AND CHARGING DIODES	10	0	13	0	5	0	17	0	0	0	0	0
0 891	02-17 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE FORMING NETWORKS	10	4	13	0	5	25	17	0	0	0	0	50
0 892	02-18 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TIMERS	10	0	13	0	5	0	17	0	0	0	0	0
0 893	02-19 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM SWITCHES SUCH AS GAS THYRATRONS	7	0	9	0	5	0	11	0	0	0	0	0
0 894	02-20 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE TRANSFORMERS	10	0	13	0	5	0	17	0	0	0	0	0
0 895	02-21 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TRANSMITTER TUBES	2	0	0	0	5	0	0	0	0	0	0	0
0 896	02-22 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM RF AMPLIFIERS	7	0	9	0	5	0	11	0	0	0	0	0
0 897	02-23 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM FREQUENCY CONVERTERS	10	0	13	0	5	0	17	0	0	0	0	0
0 898	02-24 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM IF AMPLIFIERS	7	0	9	0	5	0	11	0	0	0	0	0
0 899	02-25 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DETECTORS	12	0	17	0	5	0	22	0	0	0	0	0
0 900	02-26 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM VIDEO AMPLIFIERS	7	0	9	0	5	0	11	0	0	0	0	0
0 901	02-27 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER VIDEO AMPLIFIERS	7	0	9	0	5	0	11	0	0	0	0	0
0 902	02-28 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DON'T REMEMBER WHICH PULSE MODULATION SYSTEM STAGES (PRF)	0	0	0	0	0	0	0	0	0	0	0	0
0 903	02-29 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)	12	0	17	0	5	0	22	0	0	0	0	0
0 904	02-30 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)	10	4	13	0	5	25	17	0	0	0	0	50
0 905	02-31 DO YOU USE OR REFER TO PULSE WIDTH (PW)	12	4	17	0	5	25	22	0	0	0	0	50
0 906	02-32 DO YOU USE OR REFER TO PULSE SHAPE	10	0	13	0	5	0	17	0	0	0	0	0
0 907	02-33 DO YOU USE OR REFER TO PEAK POWER	10	0	13	0	5	0	17	0	0	0	0	0
0 908	02-34 DO YOU USE OR REFER TO AVERAGE POWER	7	0	13	0	0	0	17	0	0	0	0	0
0 909	02-35 DO YOU CALCULATE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)	7	4	13	0	0	25	17	0	0	0	0	50
0 910	02-36 DO YOU MEASURE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)	10	4	13	0	5	25	17	0	0	0	0	50
0 911	02-37 DO YOU USE FORMULAS TO CALCULATE AVERAGE POWER OR PEAK POWER OF PULSE MODULATION TRANSMIT SYSTEMS	7	0	13	0	0	0	17	0	0	0	0	0
0 912	02-38 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION TRANSMITTER SCHEMATIC DIAGRAMS	10	0	13	0	5	0	17	0	0	0	0	0
0 913	02-39 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION RECEIVER SCHEMATIC DIAGRAMS	10	0	13	0	5	0	17	0	0	0	0	0
0 914	03-01 DO YOU WORK WITH ANTENNAS IN YOUR PRESENT JOB	17	4	17	5	14	0	0	7	100	25	8	0
0 915	03-02 DO YOU INSPECT ANTENNAS	17	4	17	5	16	0	0	7	100	25	8	0

ANTENNAS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

	202	203	204	205	206	207	210	211	212	213	214	215
0 945 03-32 00 THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS	2	0	0	0	5	0	0	0	0	25	0	0
0 946 03-33 00 THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS DIRECTORS	5	0	4	0	5	0	0	0	0	25	0	0
0 947 03-34 00 THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS REFLECTORS	7	0	4	0	11	0	0	0	0	25	0	0
0 948 03-35 00 THE ANTENNA ARRAYS YOU WORK WITH CONTAIN DON'T REMEMBER WHAT KIND OF ELEMENTS	7	0	9	0	5	0	0	0	50	0	0	0
0 949 03-36 00 YOU WORK ON UNIDIRECTIONAL ANTENNAS	5	0	0	0	11	0	0	7	0	25	0	0
0 850 03-37 00 YOU WORK ON BIDIRECTIONAL ANTENNAS	5	0	0	0	11	0	0	7	0	0	0	0
0 851 03-38 00 YOU WORK ON DON'T REMEMBER THE DIRECTIONALITY	7	4	9	5	5	0	0	0	50	0	8	0
0 852 03-39 00 YOU WORK WITH ROTAR ANTENNA ARRAYS	2	0	4	0	0	0	0	0	50	0	0	0
P 953 P1-01 IN YOUR PRESENT JOB DO YOU WORK WITH TRANSMISSION LINES (TRANSMISSION LINES ARE DEFINED TO INCLUDE LEADS BETWEEN RECEIVERS AND ANTENNAS, TELEPHONE LEADS, AS WELL AS HIGH VOLTAGE POWER LINES, ETC. DO NOT CONSIDER WAVEGUIDES AS TRANSMISSION LINES)	5	4	4	0	5	25	6	0	0	25	0	0

TRANSMISSION LINES

P 954 P1-02 DO YOU REFER TO OR USE COPPER LOSS OR I2R LOSS IN TRANSMISSION LINES	0	0	0	0	0	0	0	0	0	0	0	0
P 955 P1-03 DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY CURRENTS IN TRANSMISSION LINES	0	4	0	0	0	25	0	0	0	0	0	0
P 956 P1-04 DO YOU REFER TO OR USE RADIATION LOSS IN TRANSMISSION LINES	2	0	4	0	0	0	6	0	0	0	0	0
P 957 P1-05 DO YOU USE OR REFER TO DIELECTRIC LOSS IN TRANSMISSION LINES	0	0	0	0	0	0	0	0	0	0	0	0
P 958 P1-06 DO YOU USE OR REFER TO LEAKAGE LOSSES IN TRANSMISSION LINES	0	0	0	0	0	0	0	0	0	0	0	0
P 959 P1-07 DO YOU WORK WITH TWISTED PAIR TRANSMISSION LINES	2	4	0	0	5	25	0	0	0	25	0	0
P 960 P1-08 DO YOU WORK WITH TWIN LEAD TRANSMISSION LINES	2	4	0	0	5	25	0	0	0	25	0	0
P 961 P1-09 DO YOU WORK WITH OPEN TWO-WIRE TRANSMISSION LINES	2	0	0	0	5	0	0	0	0	25	0	0
P 962 P1-10 DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION LINES	5	4	4	0	5	25	6	0	0	25	0	0
P 963 P1-11 DO YOU WORK WITH RIGID COAXIAL CABLE TRANSMISSION LINES	0	0	0	0	0	0	0	0	0	0	0	0
P 964 P1-12 DO YOU TROUBLESHOOT TRANSMISSION LINES	5	4	4	0	5	25	6	0	0	25	0	0
P 965 P1-13 DO YOU ANALYZE VOLTAGE OR CURRENT WAVEFORMS IN TRANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION (OPEN, SHORTED, CAPACITIVE, INDUCTIVE)	2	4	0	0	5	25	0	0	0	25	0	0
P 966 P1-14 DO YOU SELECT APPROPRIATE TRANSMISSION LINES TERMINATIONS TO ACHIEVE DESIRED WAVEFORMS	5	0	4	0	5	0	6	0	0	25	0	0
P 967 P1-15 DO YOU USE OR REFER TO SCHEMATIC SYMBOLS FOR LINE TERMINATIONS IN TERMS OF CIRCUIT TERMINATIONS	5	4	4	0	5	25	6	0	0	25	0	0
P 968 P1-16 DO YOU MEASURE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES	2	0	4	0	0	0	6	0	0	0	0	0
P 969 P1-17 DO YOU CALCULATE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES	2	0	4	0	0	0	6	0	0	0	0	0
P 970 P1-18 DO YOU PERFORM THE CALCULATIONS NECESSARY TO DETERMINE THE IMPEDANCE AND LENGTH OF QUARTER - WAVELENGTH MATCHING TRANSFORMERS TO MATCH TRANSMISSION LINES TO LOADS	0	0	0	0	0	0	0	0	0	0	0	0

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207	SPC 210	SPC 211	SPC 212	SPC 213	SPC 214	SPC 215
P 971 P1-19 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING MATCHING TRANSFORMERS	0	0	0	0	0	0	0	0	0	0	0	0
P 972 P1-20 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING DELTA MATCHING	0	0	0	0	0	0	0	0	0	0	0	0
P 973 P1-21 DO YOU SELECT THE TYPE OF TRANSMISSION LINE NEEDED FOR PARTICULAR JOBS WITHOUT REFERRING TO TECHNICAL DATA	2	0	4	0	0	0	6	0	0	0	0	0
P 974 P1-22 DO YOU USE OR REFER TO THE TERM CHARACTERISTIC IMPEDANCE (Z0) OF TRANSMISSION LINES	0	0	0	0	0	0	0	0	0	0	0	0
P 975 P1-23 DO YOU CALCULATE THE CHARACTERISTIC IMPEDANCE (Z0) OF TRANSMISSION LINES	0	0	0	0	0	0	0	0	0	0	0	0
P 976 P1-24 DO YOU USE OR REFER TO THE TERM CUTOFF FREQUENCY OF TRANSMISSION LINES	0	0	0	0	0	0	0	0	0	0	0	0
P 977 P1-25 DO YOU USE OR REFER TO THE TERM VELOCITY FACTOR (K) OF TRANSMISSION LINES	0	0	0	0	0	0	0	0	0	0	0	0
P 978 P1-26 DO YOU COMPUTE THE ELECTRICAL LENGTH OF TRANSMISSION LINES FOR PARTICULAR FREQUENCIES	0	0	0	0	0	0	0	0	0	0	0	0
P 979 P1-27 DO YOU CONSTRUCT TRANSMISSION LINES OF PARTICULAR ELECTRICAL LENGTH FOR GIVEN FREQUENCIES	0	0	0	0	0	0	0	0	0	0	0	0
P 980 P1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT AS THE FREQUENCY INCREASES AND THE PHYSICAL LENGTH OF TRANSMISSION LINES REMAIN CONSTANT, THE ELECTRICAL LENGTH INCREASES	2	4	4	0	0	25	6	0	0	0	0	0
P 981 P1-29 DO YOU WORK WITH NONRESONANT (FLAT) TRANSMISSION LINES	2	0	0	0	5	0	0	0	0	25	0	0
P 982 P1-30 DO YOU WORK WITH RESONANT TRANSMISSION LINES	2	0	4	0	0	0	6	0	0	0	0	0
P 983 P1-31 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING STUB MATCHING	0	0	0	0	0	0	0	0	0	0	0	0
P 984 P2-01 DO YOU WORK WITH WAVEGUIDES OR CAVITY RESONATORS IN YOUR PRESENT JOB	14	0	13	0	14	0	0	0	100	50	0	0
P 985 P2-02 DO YOU INSPECT WAVEGUIDES OR CAVITY RESONATORS	10	0	9	0	11	0	0	0	50	25	0	0
P 986 P2-03 DO YOU CLEAN WAVEGUIDES OR CAVITY RESONATORS	7	0	9	0	5	0	0	0	50	25	0	0
P 987 P2-04 DO YOU BEND WAVEGUIDES OR CAVITY RESONATORS	10	0	4	0	16	0	0	7	0	25	0	0
P 988 P2-05 DO YOU TWIST WAVEGUIDES OR CAVITY RESONATORS	2	0	0	0	5	0	0	0	0	0	0	0
P 989 P2-06 DO YOU PRESSURIZE WAVEGUIDES OR CAVITY RESONATORS	14	0	13	0	16	0	0	7	100	25	0	0
P 990 P2-07 DO YOU PURGE WAVEGUIDES OR CAVITY RESONATORS	7	0	4	0	11	0	0	7	50	25	0	0
P 991 P2-08 DO YOU TROUBLESHOOT WAVEGUIDES OR CAVITY RESONATORS	12	0	9	0	16	0	0	7	50	25	0	0
P 992 P2-09 DO YOU REMOVE OR INSTALL COMPLETE WAVEGUIDES	14	0	9	0	21	0	0	7	50	50	0	0
P 993 P2-10 DO YOU REMOVE OR INSTALL WAVEGUIDE SECTIONS	17	0	13	0	21	0	0	7	100	50	0	0
P 994 P2-11 DO YOU REMOVE OR INSTALL DUMMY LOADS	14	0	13	0	16	0	0	7	100	25	0	0
P 995 P2-12 DO YOU REMOVE OR INSTALL E BENDS	5	0	0	0	11	0	0	0	0	25	0	0
P 996 P2-13 DO YOU REMOVE OR INSTALL H BENDS	5	0	0	0	11	0	0	0	0	25	0	0
P 997 P2-14 DO YOU REMOVE OR INSTALL OTHER BENDS	14	0	13	0	16	0	0	0	100	50	0	0
P 998 P2-15 DO YOU REMOVE OR INSTALL CHOKE JOINTS	0	0	0	0	0	0	0	0	0	0	0	0
P 999 P2-16 DO YOU REMOVE OR INSTALL ROTATING JOINTS	0	0	0	0	0	0	0	0	0	0	0	0
P1000 P2-17 DO YOU REMOVE OR INSTALL DIRECTIONAL COUPLERS	5	0	0	0	11	0	0	0	0	25	0	0
P1001 P2-18 DO YOU REMOVE OR INSTALL BIDIRECTIONAL COUPLERS	2	0	0	0	5	0	0	0	0	0	0	0
P1002 P2-19 DO YOU USE OR REFER TO "A" WALL OF WAVEGUIDES	0	0	0	0	0	0	0	0	0	0	0	0

WAVEGUIDES AND CAVITY RESONATORS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

	202	203	204	205	206	207	210	211	212	213	214	215
P1025 P2-42 DO YOU DETERMINE THE POSITIONING OR SIZE OF APERTURES IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA	0	0	0	0	0	0	0	0	0	0	0	0
P1026 P2-43 ARE CHOKE JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	0	0	0	0	0	0	0	0	0	0	0	0
P1027 P2-44 ARE ROTATING JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	2	0	4	0	0	0	0	0	50	0	0	0
P1028 P2-46 ARE DON'T REMEMBER THE KIND OF JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	10	0	4	0	16	0	0	0	0	50	0	0
P1029 P2-46 DO YOU TUNE CAVITY RESONATORS USING CAPACITIVE TUNING	0	0	0	0	0	0	0	0	0	0	0	0
P1030 P2-47 DO YOU TUNE CAVITY RESONATORS USING INDUCTIVE TUNING	5	0	0	0	11	0	0	0	0	50	0	0
P1031 P2-48 DO YOU TUNE CAVITY RESONATORS USING VOLUME TUNING	2	0	0	0	5	0	0	0	0	25	0	0
P1032 P2-49 DO YOU TUNE CAVITY RESONATORS USING DON'T REMEMBER THE METHOD OF TUNING	2	0	4	0	0	0	0	0	0	0	0	0
P1033 P2-50 DO YOU MEASURE THE FREQUENCY OF SIGNALS IN CAVITY RESONATORS	5	0	0	0	11	0	0	0	0	25	0	0
P1034 P3-01 IN YOUR PRESENT JOB DO YOU WORK WITH KLYSTRONS, TRAVELING WAVE TUBES (TWT), PARAMETRIC AMPLIFIERS, OR MICROWAVE AMPLIFIERS AND OSCILLATORS	10	0	0	0	11	0	0	0	100	75	0	0
P1035 P3-02 DO YOU USE OR REFER TO INTERELECTRODE CAPACITANCE	2	0	0	0	5	0	0	0	0	25	0	0
P1036 P3-03 DO YOU USE OR REFER TO ELECTRON TRANSIT TIME	2	0	0	0	5	0	0	0	0	25	0	0
P1037 P3-04 DO YOU USE OR REFER TO LEAD INDUCTANCE	2	0	0	0	5	0	0	0	0	25	0	0
P1038 P3-05 DO YOU USE OR REFER TO RF LOSSES IN EXTERNAL CIRCUITRY	2	0	0	0	5	0	0	0	0	25	0	0
P1039 P3-06 DO YOU USE OR REFER TO PRINCIPLE OF ELECTRON VELOCITY MODULATION	0	0	0	0	0	0	0	0	0	0	0	0
P1040 P3-07 DO YOU USE OR REFER TO ELECTRON BUNCHING	0	0	0	0	0	0	0	0	0	0	0	0
P1041 P3-08 DO YOU WORK WITH TWO-CAVITY KLYSTRONS	0	0	0	0	0	0	0	0	0	0	0	0
P1042 P3-09 DO YOU WORK WITH THREE-CAVITY KLYSTRONS	2	0	0	0	5	0	0	0	0	25	0	0
P1043 P3-10 DO YOU WORK WITH REFLEX KLYSTRONS	5	0	0	0	11	0	0	0	0	25	0	0
P1044 P3-11 DO YOU WORK WITH TRAVELING-WAVE TUBES (TWT)	10	0	9	0	11	0	0	0	100	25	0	0
P1045 P3-12 DO YOU WORK WITH NONDEGENERATIVE PARAMETRIC AMPLIFIERS	5	0	4	0	5	0	0	0	50	25	0	0
P1046 P3-13 DO YOU WORK WITH UP-CONVERTER PARAMETRIC AMPLIFIERS	2	0	0	0	5	0	0	0	0	25	0	0
P1047 P3-14 DO YOU WORK WITH MAGNETRONS	2	0	0	0	5	0	0	0	0	25	0	0
P1048 P3-15 DO YOU INSPECT KLYSTRONS OR TWT	10	0	9	0	11	0	0	0	100	25	0	0
P1049 P3-16 DO YOU CLEAN KLYSTRONS OR TWT	10	0	9	0	11	0	0	0	100	25	0	0
P1050 P3-17 DO YOU TUNE KLYSTRONS OR TWT ELECTRICALLY	2	0	0	0	5	0	0	0	0	25	0	0
P1051 P3-18 DO YOU TUNE KLYSTRONS OR TWT MECHANICALLY	2	0	0	0	5	0	0	0	0	25	0	0
P1052 P3-19 DO YOU PERFORM OPERATIONAL CHECKS OF KLYSTRONS OR TWT	10	0	9	0	11	0	0	0	100	25	0	0
P1053 P3-20 DO YOU TROUBLESHOOT KLYSTRONS OR TWT	5	0	0	0	11	0	0	0	0	25	0	0
P1054 P3-21 DO YOU REMOVE OR REPLACE COMPLETE KLYSTRON OR TWT	10	0	9	0	11	0	0	0	100	25	0	0
P1055 P3-22 DO YOU REMOVE OR REPLACE KLYSTRON OR TWT COMPONENTS	2	0	0	0	5	0	0	0	0	25	0	0
P1056 P3-23 DO YOU INSPECT PARAMETRIC AMPLIFIERS	2	0	0	0	5	0	0	0	0	25	0	0
P1057 P3-24 DO YOU CLEAN PARAMETRIC AMPLIFIERS	2	0	0	0	5	0	0	0	0	25	0	0
P1058 P3-25 DO YOU ADJUST PARAMETRIC AMPLIFIERS	2	0	0	0	5	0	0	0	0	25	0	0

PCT MBS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK															
	202	203	204	205	206	207	210	211	212	213	214	215	216	217	218	219
P1059 P3-24 DO YOU TUNE PARAMETRIC AMPLIFIERS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P1060 P3-27 DO YOU PERFORM OPERATIONAL CHECKS OF PARAMETRIC AMPLIFIERS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P1061 P3-28 DO YOU TROUBLESHOOT PARAMETRIC AMPLIFIERS	2	0	0	0	5	0	0	0	0	0	25	0	0	0	0	0
P1062 P3-29 DO YOU REMOVE OR REPLACE COMPLETE PARAMETRIC AMPLIFIER	2	0	0	0	5	0	0	0	0	0	25	0	0	0	0	0
P1063 P3-30 DO YOU REMOVE OR REPLACE PARAMETRIC AMPLIFIER COMPONENTS	2	0	0	0	5	0	0	0	0	0	25	0	0	0	0	0
P1064 P3-31 DO YOU INSPECT MAGNETRONS	2	0	0	0	5	0	0	0	0	0	25	0	0	0	0	0
P1065 P3-32 DO YOU CLEAN MAGNETRONS	2	0	0	0	5	0	0	0	0	0	25	0	0	0	0	0
P1066 P3-33 DO YOU ADJUST MAGNETRONS	2	0	0	0	5	0	0	0	0	0	25	0	0	0	0	0
P1067 P3-34 DO YOU TUNE MAGNETRONS	2	0	0	0	5	0	0	0	0	0	25	0	0	0	0	0
P1068 P3-35 DO YOU PERFORM OPERATIONAL CHECKS OF MAGNETRONS	2	0	0	0	5	0	0	0	0	0	25	0	0	0	0	0
P1069 P3-36 DO YOU TROUBLESHOOT MAGNETRONS	2	0	0	0	5	0	0	0	0	0	25	0	0	0	0	0
P1070 P3-37 DO YOU REMOVE OR REPLACE COMPLETE MAGNETRON	2	0	0	0	5	0	0	0	0	0	25	0	0	0	0	0
P1071 P3-38 DO YOU REMOVE OR REPLACE MAGNETRON COMPONENTS	2	0	0	0	5	0	0	0	0	0	25	0	0	0	0	0
P1072 P3-39 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS COLLECTOR PLATES	2	0	0	0	5	0	0	0	0	0	25	0	0	0	0	0
P1073 P3-40 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER CAVITIES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P1074 P3-41 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER GRIDS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P1075 P3-42 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS FEEDBACK LOOPS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P1076 P3-43 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS DRIFT SPACES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P1077 P3-44 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER GRIDS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P1078 P3-45 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER CAVITIES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P1079 P3-46 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CONTROL GRIDS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P1080 P3-47 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATHODES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P1081 P3-48 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON REFLECTOR (REFLECTOR) PLATES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P1082 P3-49 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRIDS	2	0	0	0	5	0	0	0	0	0	25	0	0	0	0	0
P1083 P3-50 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRID CAVITY GAPS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P1084 P3-51 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON RESONANT CAVITIES	5	0	0	0	11	0	0	0	0	0	25	0	0	0	0	0
P1085 P3-52 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON MAGNETIC COUPLING LOOPS	2	0	0	0	5	0	0	0	0	0	25	0	0	0	0	0
P1086 P3-53 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON FILAMENTS	5	0	0	0	11	0	0	0	0	0	25	0	0	0	0	0
P1087 P3-54 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON CATHODES	2	0	0	0	5	0	0	0	0	0	25	0	0	0	0	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK											
	SPC 202	SPC 203	SPC 204	SPC 205	SPC 206	SPC 207	SPC 210	SPC 211	SPC 212	SPC 213	SPC 214	SPC 215
P1088 P3-65 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON OUTPUT LEADS	2	0	0	0	5	0	0	0	0	0	25	0
P1089 P3-66 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES FILAMENTS	2	0	0	0	5	0	0	0	0	0	0	0
P1090 P3-67 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES CATHODES	2	0	0	0	5	0	0	0	0	0	0	0
P1091 P3-68 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MODULATOR GRIDS	2	0	0	0	5	0	0	0	0	0	0	0
P1092 P3-69 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ANODES	2	0	0	0	5	0	0	0	0	0	0	0
P1093 P3-60 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES HELICES	5	0	0	0	11	0	0	0	0	0	25	0
P1094 P3-61 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES COLLECTORS	0	0	0	0	0	0	0	0	0	0	0	0
P1095 P3-62 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MAGNETS	0	0	0	0	0	0	0	0	0	0	0	0
P1096 P3-63 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ATTENUATORS	5	0	0	0	11	0	0	0	0	0	25	0
P1097 P3-64 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE CIRCULATORS	0	0	0	0	0	0	0	0	0	0	0	0
P1098 P3-65 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER SIGNAL CAVITIES	0	0	0	0	0	0	0	0	0	0	0	0
P1099 P3-66 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER IDLER CAVITIES	0	0	0	0	0	0	0	0	0	0	0	0
P1100 P3-67 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER VARACTOR DIODES	0	0	0	0	0	0	0	0	0	0	0	0
P1101 P3-68 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE ISOLATORS	0	0	0	0	0	0	0	0	0	0	0	0
P1102 P3-69 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER REVERSE-BIAS BATTERIES	0	0	0	0	0	0	0	0	0	0	0	0
P1103 P3-70 DO YOU PERFORM TASKS ON ANODES	0	0	0	0	0	0	0	0	0	0	0	0
P1104 P3-71 DO YOU PERFORM TASKS ON ANODE COOLING PINS	0	0	0	0	0	0	0	0	0	0	0	0
P1105 P3-72 DO YOU PERFORM TASKS ON COUPLING LOOPS	0	0	0	0	0	0	0	0	0	0	0	0
P1106 P3-73 DO YOU PERFORM TASKS ON HEATER LEADS	0	0	0	0	0	0	0	0	0	0	0	0
P1107 P3-74 DO YOU PERFORM TASKS ON RESONANT CAVITIES	2	0	0	0	5	0	0	0	0	0	25	0
P1108 P3-75 DO YOU PERFORM TASKS ON CATHODES	2	0	0	0	5	0	0	0	0	0	25	0
P1109 P3-76 DO YOU PERFORM TASKS ON MAGNETS	0	0	0	0	0	0	0	0	0	0	0	0
Q1110 Q1-01 DO YOU USE OR REFER TO STORAGE REGISTERS	24	4	30	5	21	0	39	14	0	25	0	0
Q1111 Q1-02 DO YOU USE OR REFER TO SHIFT REGISTERS	31	4	39	5	21	0	50	14	0	25	0	0
Q1112 Q1-03 DO YOU USE OR REFER TO LOGIC SYMBOLS OF SHIFT REGISTERS	29	0	39	0	16	0	50	7	0	25	0	0
Q1113 Q1-04 DO YOU USE OR REFER TO LOGIC SYMBOLS OF STORAGE REGISTERS	24	0	30	0	16	0	39	7	0	25	0	0
Q1114 Q1-05 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	29	4	39	5	16	0	50	7	0	25	0	0
Q1115 Q1-06 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF REGISTERS	29	0	35	0	21	0	44	14	0	25	0	0

PCT NBSRS RESPONDING 'YES' BY SELECTED GRPS

GPSMIO PAGE 40

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

Task Description	36	8	43	10	26	0	56	21	0	25	0	0
Q1116 Q1-07 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES HAVE PASSED	36	8	43	10	26	0	56	21	0	25	0	0
Q1117 Q2-01 DO YOU WORK WITH DIGITAL COUNTERS, REGISTERS, OR STORAGE DEVICES IN YOUR PRESENT JOB	33	16	30	19	37	0	33	29	0	50	8	0
Q1118 Q2-02 DO YOU USE OR REFER TO DELAY LINES	17	0	22	0	11	0	24	0	0	25	0	0
Q1119 Q2-03 DO YOU USE OR REFER TO MAGNETIC CORES	5	0	9	0	0	0	11	0	0	0	0	0
Q1120 Q2-04 DO YOU USE OR REFER TO MAGNETIC DRUMS	2	0	4	0	0	0	6	0	0	0	0	0
Q1121 Q2-05 DO YOU USE OR REFER TO MAGNETIC TAPES	7	0	13	0	0	0	17	0	0	0	0	0
Q1122 Q2-06 DO YOU USE OR REFER TO ACCESS TIME OR SPEED OR MEMORY SYSTEMS	12	0	17	0	5	0	22	7	0	0	0	0
Q1123 Q2-07 DO YOU USE OR REFER TO WORD CAPACITY OF MEMORY SYSTEMS	5	0	9	0	0	0	11	0	0	0	0	0
Q1124 Q2-08 DO YOU USE OR REFER TO VOLATILITY OF MEMORY SYSTEMS	5	0	9	0	0	0	6	0	0	0	0	0
Q1125 Q2-09 DO YOU USE OR REFER TO LOGIC SYMBOL OF DELAY LINES	17	0	22	0	11	0	24	0	0	25	0	0
Q1126 Q3-01 IN YOUR PRESENT JOB, DO YOU WORK WITH DIGITAL-TO-ANALOG (D/A) CONVERTERS, ANALOG-TO-DIGITAL (A/D) CONVERTERS, OR BINARY-TO-DECIMAL READOUT CONVERTERS	34	8	35	0	37	50	39	29	0	50	0	0
Q1127 Q3-02 DO YOU COMPUTE OUTPUT VOLTAGES FOR ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT VOLTAGES	24	8	26	0	26	50	33	14	0	50	0	0
Q1128 Q3-03 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE COUNT IN ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS IS DETERMINED BY ADDING THE DENOMINATORS OF THE RESISTORS	19	4	22	0	16	25	24	7	0	25	0	0
Q1129 Q3-04 DO YOU COMPUTE ANALOG VOLTAGES FOR GIVEN BINARY COUNTS IN ELECTRONIC DIGITAL-TO-ANALOG (D/A) CONVERTERS	29	4	30	0	26	25	33	14	0	50	0	0
Q1130 Q3-05 DO YOU PERFORM SAMPLE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	17	4	17	0	16	25	22	7	0	25	0	0
Q1131 Q3-06 DO YOU PERFORM HOLD FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	19	4	17	0	21	25	22	7	0	50	0	0
Q1132 Q3-07 DO YOU PERFORM COMPARE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	19	4	17	0	21	25	22	7	0	50	0	0
Q1133 Q3-08 DO YOU PERFORM DIGITIZE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	14	4	9	0	21	25	11	7	0	50	0	0
Q1134 Q3-09 DO YOU PERFORM DON'T REMEMBER WHICH FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	10	0	9	0	11	0	11	7	0	25	0	0
Q1135 Q3-10 DO YOU USE OR REFER TO SAMPLE FUNCTION OF A/D CONVERTERS	17	4	22	0	11	25	28	7	0	0	0	0
Q1136 Q3-11 DO YOU USE OR REFER TO HOLD FUNCTION OF A/D CONVERTERS	14	4	17	0	11	25	22	7	0	0	0	0
Q1137 Q3-12 DO YOU USE OR REFER TO COMPARE FUNCTION OF A/D CONVERTERS	14	4	17	0	11	25	22	7	0	0	0	0
Q1138 Q3-13 DO YOU USE OR REFER TO DIGITAL FUNCTION OF A/D CONVERTERS	17	4	22	0	11	25	28	7	0	0	0	0
Q1139 Q3-14 DO YOU PERFORM ANY TASKS ON MECHANICAL ANALOG-TO-DIGITAL (A/D) CONVERTERS	5	0	4	0	5	50	6	0	0	0	0	0

DIGITAL TO ANALOG CONVERTERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

PHANTASTRONS
DY-TSK

	202	203	204	205	206	207	210	211	212	213	214	216
R1140 R1-01 DO YOU WORK WITH PHANTASTRON CIRCUITRY IN YOUR PRESENT JOB	0	0	0	0	0	0	0	0	0	0	0	0
R1141 R2-01 IN YOUR PRESENT JOB DO YOU WORK WITH SCHMITT TRIGGER CIRCUITS	31	16	30	10	32	50	39	21	0	50	0	0
R1142 R2-02 DO YOU TRACE DATA FLOW THROUGH SCHMITT TRIGGER SCHEMATIC DIAGRAMS	33	16	35	10	32	50	39	21	0	50	0	0
R1143 R2-03 DO YOU USE OR REFER TO SCHMITT TRIGGER LOGIC SYMBOLS	31	12	38	10	26	25	39	21	0	25	0	0
R1144 R3-01 IN YOUR PRESENT JOB DO YOU FABRICATE MULTICONDUCTOR CABLES	48	28	48	14	47	100	50	36	50	75	0	100
R1145 R3-02 DO YOU FABRICATE COAXIAL CABLES	45	16	65	10	47	50	56	36	100	75	0	50
S1146 S1-01 IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS ON VISUAL READOUT SYSTEMS	57	16	57	10	32	50	61	36	50	0	0	0
S1147 S1-02 DO YOU PERFORM ANY TASKS ON NIXIE LIGHTS OR NIXIE LIGHT DECODER SYSTEMS	14	8	17	0	11	50	22	14	0	0	0	0
S1148 S1-03 DO YOU ANALYZE NIXIE LIGHT DECODER SYSTEMS USING BOOLEAN ALGEBRA	7	4	9	0	5	25	11	0	0	0	0	0
S1149 S2-01 DO YOU WORK WITH PHOTO TUBES IN YOUR PRESENT JOB	60	10	28	10	26	50	48	30	0	0	15	0
S1150 S3-01 IN YOUR PRESENT JOB DO YOU WORK WITH CHOPPER CIRCUITS	19	24	22	24	16	25	22	0	0	50	0	0
S1151 S3-02 DO YOU MEASURE EXCITATION FREQUENCIES	12	12	17	10	5	25	22	7	0	0	0	0
S1152 S3-03 DO YOU MEASURE VOLTAGE-CURRENT PHASE RELATIONSHIPS	10	16	13	14	5	25	17	0	0	25	0	0
S1153 S3-04 DO YOU USE OR REFER TO EXCITATION FREQUENCIES	10	12	17	10	0	25	22	0	0	0	0	0
S1154 S3-05 DO YOU USE OR REFER TO VOLTAGE-CURRENT PHASE RELATIONSHIPS	10	4	13	0	5	25	17	0	0	25	0	0
S1155 S3-06 DO YOU USE SERVOS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	24	17	24	17	24	21	25	7	0	50	0	0
S1156 S3-07 DO YOU USE DETECTORS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	21	12	22	10	21	25	22	7	0	50	0	0
S1157 S3-08 DO YOU USE ERROR SIGNAL DEVICES IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	24	20	26	19	21	25	28	7	0	50	0	0
S1158 S3-09 DO YOU USE COMPARISON CIRCUITS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	19	16	22	14	16	25	22	7	0	25	0	0
T1159 T1-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH INFRARED SYSTEMS	43	24	39	19	47	50	44	29	0	100	31	0
T1160 T1-02 DO YOU INSPECT INFRARED SYSTEMS	36	12	35	5	42	50	39	21	0	100	0	0
T1161 T1-03 DO YOU CLEAN INFRARED SYSTEMS	38	12	35	5	42	50	39	21	0	100	0	0
T1162 T1-04 DO YOU ADJUST OR CALIBRATE INFRARED SYSTEMS	40	4	35	0	47	25	39	29	0	100	0	0
T1163 T1-05 DO YOU OPERATE INFRARED SYSTEMS	38	8	35	0	42	50	39	21	0	100	0	0
T1164 T1-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF INFRARED SYSTEMS	38	12	35	5	42	50	39	21	0	100	0	0
T1165 T1-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF INFRARED SYSTEMS	38	8	35	0	42	50	39	21	0	100	0	0
T1166 T1-08 DO YOU TROUBLESHOOT DOWN TO INFRARED SYSTEM COMPONENT PARTS	38	0	35	0	42	0	39	21	0	100	0	0
T1167 T1-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF INFRARED SYSTEMS	38	12	35	5	42	50	39	21	0	100	0	0
T1168 T1-10 DO YOU REMOVE OR REPLACE INFRARED SYSTEM COMPONENT PARTS	36	0	30	0	42	0	33	21	0	100	0	0

SCHMITT TRIGGERS

CABLE FABRICATION

INPUT/OUTPUT DEVICES

PHOTO SENSITIVE DEVICES

SYNCHRONOUS VIBRATIONS

(CHOPPER CIRCUITS)

PCT MBRS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task	202	203	204	205	206	207	210	211	212	213	214	215	216	217	218	219	220
11169 11-11 DO YOU USE OR REFER TO FAR REGION	31	0	35	0	24	0	39	21	0	25	0	0	0	0	0	0	0
11170 11-12 DO YOU USE OR REFER TO INTERMEDIATE REGION	31	0	35	0	24	0	39	21	0	25	0	0	0	0	0	0	0
11171 11-13 DO YOU USE OR REFER TO NEAR REGION	29	0	38	0	24	0	33	21	0	25	0	0	0	0	0	0	0
11172 11-14 DO YOU USE OR REFER TO MICRON	36	0	35	0	37	0	39	21	0	25	0	0	0	0	0	0	0
11173 11-15 DO YOU USE OR REFER TO GRAY BODIES	36	4	35	5	37	0	39	29	0	50	6	0	0	0	0	0	0
11174 11-16 DO YOU USE OR REFER TO BLACK BODIES	38	8	39	5	37	25	44	29	0	50	8	0	0	0	0	0	0
11175 11-17 DO YOU USE OR REFER TO ABSORPTION	33	8	35	5	32	25	44	29	0	25	8	0	0	0	0	0	0
11176 11-18 DO YOU USE OR REFER TO SCATTERING	36	0	35	0	37	0	39	29	0	50	0	0	0	0	0	0	0
11177 11-19 DO YOU USE OR REFER TO ABSOLUTE ZERO	2	0	0	0	5	0	0	7	0	0	0	0	0	0	0	0	0
11178 11-20 DO YOU PERFORM TASKS ON BLITZ	2	0	0	0	5	0	0	7	0	0	0	0	0	0	0	0	0
11179 11-21 DO YOU PERFORM TASKS ON TARGET BUTTONS	5	4	4	0	5	25	0	7	0	0	0	0	0	0	0	0	0
11180 11-22 DO YOU PERFORM TASKS ON EJECTOR LENSES	10	4	9	0	11	25	11	7	0	25	0	0	0	0	0	0	0
11181 11-23 DO YOU PERFORM TASKS ON OCULAR LENSES	12	8	17	5	5	25	22	7	0	0	0	0	0	0	0	0	0
11182 11-24 DO YOU PERFORM TASKS ON CORRECTION LENSES	12	8	17	5	5	25	22	7	0	0	0	0	0	0	0	0	0
11183 11-25 DO YOU PERFORM TASKS ON FILTERS	21	16	17	10	26	50	22	14	0	50	8	0	0	0	0	0	0
11184 11-26 DO YOU PERFORM TASKS ON SPHERICAL MIRRORS	19	4	22	0	16	25	22	7	0	25	0	0	0	0	0	0	0
11185 11-27 DO YOU PERFORM TASKS ON PLANE MIRRORS	24	12	22	5	32	50	24	14	0	75	0	0	0	0	0	0	0
11186 12-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH LASERS	62	0	65	0	58	0	67	57	100	50	0	0	0	0	0	0	0
11187 12-02 DO YOU INSPECT LASER SYSTEMS	60	0	57	0	63	0	56	64	100	50	0	0	0	0	0	0	0
11188 12-03 DO YOU CLEAN LASER SYSTEMS	60	0	57	0	63	0	56	64	100	50	0	0	0	0	0	0	0
11189 12-04 DO YOU OPERATE LASER SYSTEMS	60	0	57	0	63	0	56	64	100	50	0	0	0	0	0	0	0
11190 12-05 DO YOU OPERATE LASER SYSTEMS	60	0	57	0	63	0	56	64	100	50	0	0	0	0	0	0	0
11191 12-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF LASER SYSTEMS	60	0	57	0	63	0	56	64	100	50	0	0	0	0	0	0	0
11192 12-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF LASER SYSTEMS	60	0	57	0	63	0	56	64	100	50	0	0	0	0	0	0	0
11193 12-08 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF LASER SYSTEMS	48	0	43	0	53	0	44	50	50	50	0	0	0	0	0	0	0
11194 12-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF LASER SYSTEMS	60	0	57	0	63	0	56	64	100	50	0	0	0	0	0	0	0
11195 12-10 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF LASER SYSTEMS	50	0	43	0	58	0	44	57	50	50	0	0	0	0	0	0	0
11196 12-11 DO YOU USE OR REFER TO ANGSTROMS (A)	43	0	43	0	42	0	50	43	0	25	0	0	0	0	0	0	0
11197 12-12 DO YOU USE OR REFER TO ELECTRON ENERGY LEVELS	36	0	43	0	26	0	44	36	50	0	0	0	0	0	0	0	0
11198 12-13 DO YOU USE OR REFER TO GROUND STATE	40	0	48	0	32	0	56	36	0	25	0	0	0	0	0	0	0
11199 12-14 DO YOU USE OR REFER TO EXCITED STATE	45	0	48	0	42	0	56	43	0	25	0	0	0	0	0	0	0
11200 12-15 DO YOU USE OR REFER TO PACKET OF RADIATION	26	0	26	0	26	0	33	29	0	0	0	0	0	0	0	0	0
11201 12-16 DO YOU USE OR REFER TO PHOTONS	38	0	39	0	37	0	50	43	0	0	0	0	0	0	0	0	0
11202 12-17 DO YOU USE OR REFER TO SPONTANEOUS EMISSION	38	0	43	0	32	0	50	36	0	25	0	0	0	0	0	0	0
11203 12-18 DO YOU USE OR REFER TO STIMULATED EMISSION	38	0	39	0	37	0	50	36	0	25	0	0	0	0	0	0	0
11204 12-19 DO YOU USE OR REFER TO COHERENCE OR INCOHERENCE	43	0	43	0	42	0	50	43	50	25	0	0	0	0	0	0	0
11205 12-20 DO YOU USE OR REFER TO INVERSION LEVEL	21	0	22	0	21	0	22	21	0	0	0	0	0	0	0	0	0
11206 12-21 DO YOU USE OR REFER TO MONOCHROMATIC	29	0	30	0	24	0	33	21	0	25	0	0	0	0	0	0	0
11207 12-22 DO YOU WORK WITH ACTIVE MATERIALS	40	0	42	0	26	0	22	21	0	25	0	0	0	0	0	0	0
11208 12-23 DO YOU WORK WITH PUMPING SOURCES	24	0	43	0	37	0	50	36	0	25	0	0	0	0	0	0	0
11209 12-24 DO YOU WORK WITH FULL SILVERED (100% REFLECTIVE) MIRRORS	38	0	43	0	32	0	50	29	50	25	0	0	0	0	0	0	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

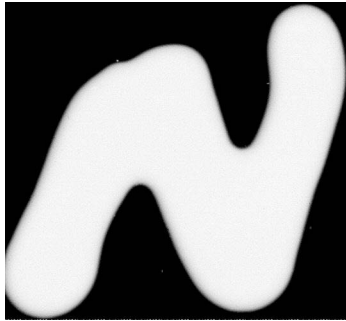
	202	203	204	205	206	207	210	211	212	213	214	215
T1210 T2-25 DO YOU WORK WITH HALF SILVERED (928 REFLECTIVE) MIRRORS	38	0	43	0	32	0	44	29	50	25	0	0
T1211 T2-26 DO YOU WORK WITH HELICAL FLASHTUBES	34	0	30	0	42	0	33	43	0	25	0	0
T1212 T2-27 DO YOU WORK WITH RUBY	43	0	39	0	47	0	39	43	50	50	0	0
T1213 T2-28 DO YOU WORK WITH HELIUM-NEON	29	0	26	0	32	0	22	29	50	50	0	0
T1214 T2-29 DO YOU WORK WITH HELIUM-XENON	17	0	13	0	21	0	17	7	0	50	0	0
T1215 T2-30 DO YOU WORK WITH XENON	19	0	13	0	26	0	17	21	0	50	0	0
T1216 T2-31 DO YOU WORK WITH CESIUM-HELIUM	10	0	9	0	11	0	6	7	0	25	0	0
T1217 T2-32 DO YOU WORK WITH ARGON	12	0	13	0	11	0	17	0	0	25	0	0
T1218 T2-33 DO YOU WORK WITH NEODYMIUM IN GLASS	14	0	17	0	11	0	17	7	0	25	0	0
T1219 T2-34 DO YOU WORK WITH GALLIUM ARSENIDE	19	0	26	0	11	0	28	7	0	25	0	0
T1220 T3-01 IN YOUR PRESENT JOB DO YOU WORK WITH DISPLAY TUBES, SUCH AS DIRECT VIEW STORAGE (DVST) OR MULTIPLE MODE STORAGE TUBES (HMST)	7	8	13	5	0	25	6	0	0	0	0	0

DISPLAY TUBES

T1221 T3-02 DO YOU INSPECT DVST OR HMST	7	8	13	5	0	25	6	0	0	0	0	0
T1222 T3-03 DO YOU CLEAN DVST OR HMST	7	8	13	5	0	25	6	0	0	0	0	0
T1223 T3-04 DO YOU ADJUST OR CALIBRATE DVST OR HMST	5	4	9	0	0	25	6	0	0	0	0	0
T1224 T3-05 DO YOU OPERATE SYSTEMS THAT CONTAIN DVST OR HMST	7	8	13	5	0	25	6	0	0	0	0	0
T1225 T3-06 DO YOU TROUBLESHOOT DVST OR HMST CIRCUITS	5	8	9	5	0	25	6	0	0	0	0	0
T1226 T3-07 DO YOU REMOVE OR REPLACE DVST OR HMST TUBES FROM MAJOR ASSEMBLIES OR UNITS	5	8	9	5	0	25	6	0	0	0	0	0
T1227 T3-08 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF DVST	2	0	4	0	0	0	6	0	0	0	0	0
T1228 T3-09 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF HMST	2	0	4	0	0	0	6	0	0	0	0	0
T1229 T3-10 DO YOU PERFORM TASKS ON FLOOD GUNS	0	0	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	0	0
T1231 T3-12 DO YOU PERFORM TASKS ON ATTACK GUNS	0	0	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	0	0
T1233 T3-14 DO YOU PERFORM TASKS ON STORAGE GRIDS	0	0	0	0	0	0	0	0	0	0	0	0

TASKS

U1234 U1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY PROGRAMMING TASKS	5	4	9	0	0	25	11	0	0	0	0	0
U1235 U1-02 DO YOU USE OR REFER TO DECIMAL SYSTEMS	2	0	4	0	0	0	6	0	0	0	0	0
U1236 U1-03 DO YOU USE OR REFER TO PROGRAMS	5	0	9	0	0	0	11	0	0	0	0	0
U1237 U1-04 DO YOU USE OR REFER TO HEXIDECIMAL SYSTEMS	5	0	4	0	5	0	6	0	0	25	0	0
U1238 U1-05 DO YOU USE OR REFER TO 8-4-2-1 SYSTEMS	0	4	0	0	0	25	0	0	0	0	0	0
U1239 U1-06 DO YOU USE OR REFER TO FOUR SYSTEMS	0	0	0	0	0	0	0	0	0	0	0	0
U1240 U1-07 DO YOU USE OR REFER TO BINARY SYSTEMS	2	4	4	0	0	25	6	0	0	0	0	0
U1241 U1-08 DO YOU USE OR REFER TO TIME-SHARING	0	0	0	0	0	0	0	0	0	0	0	0
U1242 U1-09 DO YOU USE OR REFER TO DATA WORDS	5	0	9	0	0	0	11	0	0	0	0	0
U1243 U1-10 DO YOU USE OR REFER TO ADDRESS WORDS	5	0	9	0	0	0	11	0	0	0	0	0
U1244 U1-11 DO YOU USE OR REFER TO ADDRESS/SUBADDRESS	2	0	4	0	0	0	6	0	0	0	0	0
U1245 U1-12 DO YOU USE OR REFER TO STEERING/INFORMATION	5	0	9	0	0	0	11	0	0	0	0	0
U1246 U1-13 DO YOU USE OR REFER TO INFORMATION WORDS	2	0	4	0	0	0	6	0	0	0	0	0
U1247 U1-14 DO YOU PERFORM TASKS ON SINGLE LEVEL PROGRAMMING	2	0	4	0	0	0	6	0	0	0	0	0
U1248 U1-15 DO YOU PERFORM TASKS ON MULTI-LEVEL PROGRAMMING	2	0	4	0	0	0	6	0	0	0	0	0



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ELECTRONIC PRINCIPLES AVIONICS SENSOR SYSTEMS CAREER LADDER AFS--ETC(U)
OCT 77 T J O'CONNOR, D S STREET

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2 OF 2
ADA
048682

SUPPLEMENTARY

INFORMATION

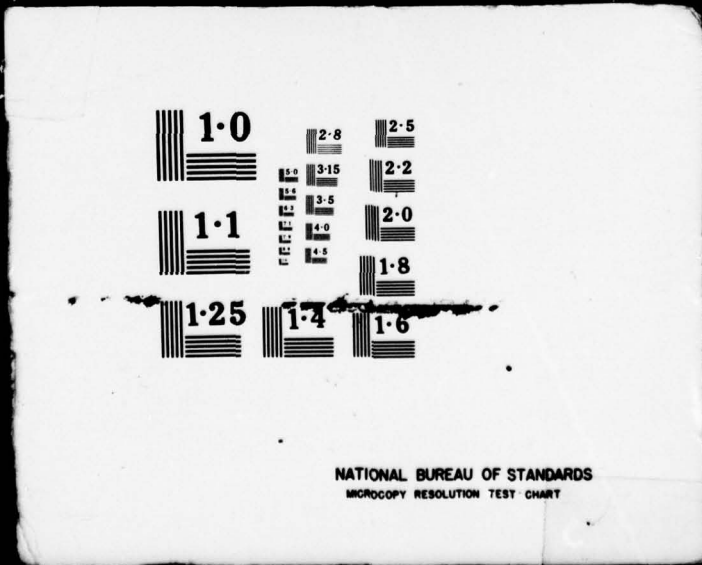


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A048682

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19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Electronic principles Electronics Basic electronics Air Force training Avionics Teaching methods Electronic equipment Training Electronic technicians		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned to Avionics Sensor Systems Specialty (AFSC 329X0 A and B). The report gives a detailed listing of the technical tasks and knowledge needed to perform the jobs within the specialty or career ladder. <i>2 (over)</i> CONTINUED		

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This specialty has the following functions:

Installs, maintains, and repairs sensor system equipment. Performs preventive maintenance on avionic sensor systems equipment. Installs avionic sensor systems. Repairs avionic sensor systems. Maintains inspection and maintenance records. Supervises avionic sensor systems repair personnel.

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