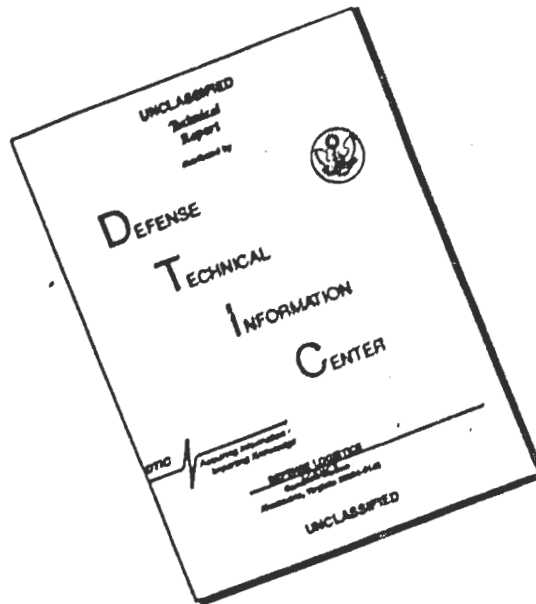


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OCCUPATIONAL SURVEY REPORT ELECTRONIC PRINCIPLES

1



WEATHER EQUIPMENT SPECIALIST

AFSC 30250

AFPT 90-302-222
2 September 1977

OCCUPATIONAL SURVEY BRANCH
USAF OCCUPATIONAL MEASUREMENT CENTER
LACKLAND AFB TEXAS 78236

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned as Weather Equipment Specialist (AFSC 30250). The report gives a detailed listing of the technical tasks and knowledge needed to perform the jobs within the specialty or career ladder.																				

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This specialty has the following functions:

installs, maintains, inspects and repairs electronic and mechanical meteorological observing equipment. Installs and removes meteorological equipment. Performs preventive maintenance on meteorological equipment. Supervises weather equipment maintenance personnel.

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78 10 06 14

PREFACE

This report presents a summary of the results of a detailed Air Force Electronic Principles Survey of the Weather Equipment Specialist, AFSC 30250.

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

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

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

This report has been reviewed and is approved.

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

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

ELECTRONIC PRINCIPLES OCCUPATIONAL SURVEY REPORT
WEATHER EQUIPMENT SPECIALIST
AFSC 30250

INTRODUCTION

This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned as Weather Equipment Specialist (AFSC 30250). The data for this report were collected during the period April through June 1977.

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

DEVELOPMENT OF THE ELECTRONIC PRINCIPLES INVENTORY (EPI)

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

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

ADMINISTRATION

The Electronic Principles Inventory was administered by mail to AFSC 30250 airmen worldwide. Responses from 111 individuals represented 20 percent of the total of all AFSC 30250 personnel. Table 2 shows the percentage distribution by major command of the survey incumbents.

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TABLE 1
EPI SUBJECT AREAS

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

TABLE 1 (CONTINUED)

EPI SUBJECT AREAS

SEQUENCE OF SUBJECT AREAS	SUBJECT AREA TITLE	BEGINNING ITEM NUMBER	GPSUM PAGE NUMBER
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	30250	
	PERCENT ASSIGNED	PERCENT OF SAMPLE
MAC	89	94
AFCS	6	1
ATC	4	4
OTHERS	1	1
TOTAL	100	100

Total Assigned - 544
Total Sampled - 111
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 three selected groups identified for this report. Pages 2-44 show the percentage of the incumbents responding to the EPI items. The computer program results display the percent members answering "yes" to the subject area questions. The reader can locate a specific subject area by referring to the Appendix page number as listed in Table 1. For example, the Transformers area results are given on page 6 of the GPSUM. The percentage of survey respondents indicating use of specific electronic principles ranged from high in areas such as Resistance (pp. 2-3), Soldering (pp. 11-12) and Power Supplies (p. 19) to low in areas such as Single Sideband Systems (pp. 30-31) and Digital To Analog Converters (p. 40). Additional AFSC 30250 data can be obtained upon request to the Chief, Occupational Survey Branch (OMY).

APPENDIX

PCF GROUPS RESPONDING TO REQUESTS BY SELECTED GROUPS

WPSUM PAGE 1

TABLEAU OF ELECTRONIC PRINCIPLES UTILIZATION DATA FOR SELECTED GROUPS
IN THE 30200 CABLE FIELD.

REPORTS ON THE FOLLOWING GROUPS WERE REQUESTED

GROUP IDENTITY - SP001 ALL AIRMEN DAFSC 30250	CONTAINING 111 MEMBERS.
GROUP IDENTITY - SP002 ALL AIRMEN DAFSC 30250 STATIONED IN CONUS	CONTAINING 71 MEMBERS.
GROUP IDENTITY - SP003 ALL AIRMEN DAFSC 30250 STATIONED OUTSIDE CONUS	CONTAINING 40 MEMBERS.

BASE GROUP SUMMARY
PLANT MEMBERS PERFORMING

DE-75

	SPC	SPC	SPC
	001	002	003
1 1-01 10 YOU PRESENT JOB DO YOU USE INSTRUMENTS SUCH AS ALTIMETERS OR OSCILLOSCOPES, IN WHICH IT IS NECESSARY TO AMPLIFY OR ATTENUATE VOLTAGE, RESISTANCE, ETC., BY POWERS OF 10.	93	99	90
2 1-02 00 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.	55	51	03
3 1-03 00 YOU REARRANGE AND SOLVE FORMULAS OR EQUATIONS.	94	52	90
4 1-04 00 YOU CALCULATE THE SQUARE ROOT OF A QUANTITY.	20	28	5
5 1-05 00 YOU SOLVE FOR UNKNOWN QUANTITIES.	91	99	38
6 1-06 00 YOU CONVERT NUMBERS TO LOGARITHMS.	17	23	7
7 1-07 00 YOU USE LOGARITHM TABLES IN ANY TYPE OF CALCULATIONS.	20	25	10
8 1-08 00 YOU SOLVE QUADRATIC EQUATIONS.	19	11	17
9 1-09 00 YOU USE THE NATURAL SYSTEM OF LOGARITHMS.	10	13	5
10 1-10 00 YOU PERFORM CALCULATIONS ON VECTOR QUANTITIES.	21	25	13
11 1-11 00 YOU WORK WITH TRIGONOMETRIC FUNCTIONS SUCH AS SINE, COSINE, OR TANGENT.	32	39	20
12 1-12 00 YOU DETERMINE AREAS OF PLANT FIGURES.	6	11	2
13 1-13 00 YOU SOLVE OR USE SIMULTANEOUS EQUATIONS.	8	10	5
14 1-14 00 YOU SOLVE OR USE PROPORTIONS.	29	27	28
15 1-15 00 YOU USE THE TERM VOLTAGE OR VOLT (V).	98	97	100
16 1-16 00 YOU USE THE TERM ELECTROMOTIVE FORCE (EMF).	41	70	95
17 1-17 00 YOU USE THE TERM OHM.	99	99	100
18 1-18 00 YOU USE THE TERM AMP.	24	39	17
19 1-19 00 YOU USE THE TERM WATT.	17	18	15
20 1-20 00 YOU USE THE TERM AMPERE.	97	96	100
21 1-21 00 YOU USE THE TERM NEUTRON.	23	32	7
22 1-22 00 YOU USE THE TERM COULOMB.	20	23	15
23 1-23 00 YOU USE THE TERM PROTON.	23	21	7
24 1-24 00 YOU WORK WITH RESISTORS IN YOUR PRESENT JOB.	86	84	85
25 1-25 00 YOU INSPECT RESISTORS.	95	97	90
26 1-26 00 YOU CLEAN RESISTORS.	99	99	92
27 1-27 00 YOU ADJUST RESISTORS.	94	99	90
28 1-28 00 YOU CHECK OHMIC VALUE OF RESISTORS.	99	99	92
29 1-29 00 YOU REMOVE OR REPLACE RESISTORS.	97	97	92
30 1-30 00 YOU USE OR REFER TO TEMPERATURE COEFFICIENTS FOR RESISTORS ON ANY TASKS YOU PERFORM.	57	59	90
31 1-31 00 YOU USE OR REFER TO RESISTOR SYMBOLS SUCH AS R1R2 RESISTOR SYMBOLS OR TAPPED RESISTOR SYMBOLS.	95	97	92
32 1-32 00 YOU IDENTIFY OR CLASSIFY THE RESISTORS YOU WORK WITH AS CARBON, FILM, WIRE, S.TOE TAP, THERMOSTAT, OR POTENTIOMETER.	95	97	92
33 1-33 00 YOU USE RESISTOR COLOR CODES WHICH INDICATE OHMIC VALUE OF RESISTANCE.	95	97	90

MATHEMATICS

DIRECT CURRENT AND VOLTAGE

RESISTANCE

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DT-TS

	SPC 001	SPC 002	SPC 003
A 34 A3-11 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE TOLERANCE.	92	93	90
A 35 A3-12 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE FAILURE RATE.	29	35	17
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.	46	52	35
A 37 A3-14 DO YOU USE OR REFER TO THE SCHEMATIC SYMBOLS WHICH REPRESENT BATTERIES, FUSES, CONDUCTORS, LAMPS, OR SWITCHES	97	99	95
A 38 A3-15 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES RESISTIVE CIRCUITS.	77	85	65
A 39 A3-16 DO YOU CALCULATE TOTAL CURRENT FOR SERIES RESISTIVE CIRCUITS.	73	79	62
A 40 A3-17 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES RESISTIVE CIRCUITS.	77	85	65
A 41 A3-18 DO YOU CALCULATE POWER DISSIPATION FOR SERIES RESISTIVE CIRCUITS.	59	62	52
A 42 A3-19 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES PARALLEL RESISTIVE CIRCUITS.	75	82	63
A 43 A3-20 DO YOU CALCULATE TOTAL CURRENT FOR SERIES PARALLEL RESISTIVE CIRCUITS.	72	79	60
A 44 A3-21 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES PARALLEL RESISTIVE CIRCUITS.	75	83	60
A 45 A3-22 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR SERIES PARALLEL RESISTIVE CIRCUITS.	68	75	55
A 46 A3-23 DO YOU CALCULATE POWER DISSIPATION FOR SERIES PARALLEL RESISTIVE CIRCUITS.	56	62	45
A 47 A3-24 DO YOU CALCULATE TOTAL RESISTANCE FOR PARALLEL RESISTIVE CIRCUITS.	73	79	63
A 48 A3-25 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RESISTIVE CIRCUITS.	68	75	57
A 49 A3-26 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR PARALLEL RESISTIVE CIRCUITS.	74	82	60
A 50 A3-27 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR PARALLEL RESISTIVE CIRCUITS.	64	73	57
A 51 A3-28 DO YOU CALCULATE POWER DISSIPATION FOR PARALLEL RESISTIVE CIRCUITS.	54	59	45
B 52 A1-01 DO YOU MEASURE RESISTANCE.	98	99	97
B 53 A1-02 DO YOU REPAIR OHMMETERS.	7	7	7
B 54 A1-03 DO YOU MEASURE VOLTAGE.	98	99	97
B 55 A1-04 DO YOU REPAIR VOLTMETERS.	7	7	7
B 56 A1-05 DO YOU REPAIR AMMETERS.	7	8	5
B 57 A1-06 DO YOU MEASURE CURRENT.	94	97	95
B 58 A1-07 DO YOU USE MULTIMETERS.	94	99	97
B 59 A1-08 DO YOU DIRECTLY USE A QUANTITY OF CHARGE CALLED A COULOMB.	6	7	5
B 60 A1-09 DO YOU READ SCHEMATICS.	99	97	100

MULTIMETER USES

PCF TASKS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PLC/NT MEMBERS PERFORMING

GPSUBJ PAGE 4

00-154

SPC SPC SPC
001 002 003

ALTERNATING CURRENT

INDUCTORS AND INDUCTIVE REACTANCE

61 42-01 00 YOU USE OR REFER TO THE TERM EFFECTIVE VOLTAGE
(RMS).
62 42-02 00 YOU USE OR REFER TO THE TERM PEAK TO PEAK VOLTAGE.
63 42-03 00 YOU USE OR REFER TO THE TERM AVERAGE VOLTAGE (AC).
64 42-04 00 YOU USE OR REFER TO THE TERM WAVE LENGTH.
65 42-05 00 YOU USE OR REFER TO THE TERM FREQUENCY.
66 42-06 00 YOU USE OR REFER TO THE TERM INSTANTANEOUS VALUE.
67 42-07 00 YOU WORK WITH INDUCTORS OR CIRCUITS CONTAINING
INDUCTORS, COILS, OR CHOKE COILS IN YOUR PRESENT JOB.
68 42-08 00 YOU INSPECT INDUCTORS.
69 42-09 00 YOU CLEAN INDUCTORS.
70 42-10 00 YOU ADJUST INDUCTORS.
71 42-11 00 YOU REMOVE OR REPLACE INDUCTORS.
72 42-12 00 YOU USE OR REFER TO INDUCTANCE.
73 42-13 00 YOU USE OR REFER TO MEMBERS.
74 42-14 00 YOU USE OR REFER TO INDUCTIVE REACTANCE.
75 42-15 00 YOU USE OR REFER TO CURRENT LOSS IN INDUCTORS.
76 42-16 00 YOU USE OR REFER TO HYSTERESIS LOSS IN INDUCTORS.
77 42-17 00 YOU USE OR REFER TO EDU CURRENT LOSS IN INDUCTORS.
78 42-18 00 YOU USE OR REFER TO THE GENERAL RULE THAT
INDUCTANCE IS PROPORTIONAL TO THE SQUARE OF THE NUMBER OF
TURNS OF THE COIL.
79 42-19 00 YOU USE OR REFER TO THE GENERAL RULE THAT THE IN-
DUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE CROSS
SECTIONAL AREA OF THE CORE.
80 42-20 00 YOU USE OR REFER TO THE GENERAL RULE THAT THE
INDUCTANCE OF A COIL IS INVERSELY PROPORTIONAL TO ITS
LENGTH.
81 42-21 00 YOU USE OR REFER TO THE GENERAL RULE THAT THE
INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE
PERMEABILITY OF THE CORE MATERIAL.
82 42-22 00 YOU CALCULATE INDUCTANCE FOR PARTICULAR INDUCTORS
USING FORMULAS.
83 42-23 00 YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTANCE
IN SERIES.
84 42-24 00 YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS
IN PARALLEL.
85 42-25 00 YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS
IN SERIES-PARALLEL CIRCUITS.
86 42-26 00 YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT
LAYS VOLTAGE IN AC INDUCTOR CIRCUITS.
87 42-27 00 YOU CALCULATE INDUCTIVE REACTANCE.
88 42-28 00 YOU USE OR REFER TO THE GENERAL RULE THAT
INDUCTIVE REACTANCE IS DIRECTLY PROPORTIONAL TO FREQUENCY.
89 42-29 00 YOU WORK WITH POWER INDUCTORS.
90 42-30 00 YOU WORK WITH AUDIO FREQUENCY INDUCTORS.
91 42-31 00 YOU WORK WITH RADIO FREQUENCY INDUCTORS.

79 80 77
89 93 82
86 90 80
79 87 65
92 97 62
47 51 40
83 89 72
84 90 72
82 87 72
79 87 65
88 93 80
77 42 70
63 66 55
44 73 57
21 28 7
33 42 17
26 37 7
22 25 15
17 20 13
21 25 13
23 31 7
23 31 10
24 34 17
28 34 17
27 34 15
44 52 30
31 38 17
41 46 30
55 62 42
55 55 55
63 70 50

PERCENTS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DI-75K

	SPC 001	SPC 002	SPC 003
C 92 C1-01 DO YOU MORE WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS IN YOUR PRESENT JOB..	93	94	48
C 93 C1-02 DO YOU INSPECT CAPACITORS.	95	97	0
C 94 C1-03 DO YOU CLEAN CAPACITORS.	91	93	88
C 95 C1-04 DO YOU ADJUST CAPACITORS.	82	84	75
C 96 C1-05 DO YOU TEST CAPACITORS.	87	89	85
C 97 C1-06 DO YOU DISCHARGE CAPACITORS.	94	96	90
C 98 C1-07 DO YOU REMOVE OR REPLACE CAPACITORS.	94	97	95
C 99 C1-08 DO YOU USE OR REFER TO DISTRIBUTED CAPACITANCE.	32	42	13
C 100 C1-09 DO YOU USE OR REFER TO ORBITAL STRESS OF ELECTRONS IN A DIELECTRIC.	6	8	2
C 101 C1-10 DO YOU USE OR REFER TO PARADS, MICROPARADS, OR PICO PARADS.	88	92	82
C 102 C1-11 DO YOU USE OR REFER TO CAPACITANCE.	92	93	85
C 103 C1-12 DO YOU USE OR REFER TO DIELECTRIC CONSTANT	23	28	15
C 104 C1-13 DO YOU USE OR REFER TO WORKING VOLTAGE RATING OF CAPACITORS	79	83	72
C 105 C1-14 DO YOU USE OR REFER TO CAPACITIVE REACTANCE	53	58	45
C 106 C1-15 DO YOU USE OR REFER TO CAPACITOR COLOR CODES	54	61	97
C 107 C1-16 DO YOU MORE WITH CAPACITORS IN AC CIRCUITS	95	97	90
C 108 C1-17 DO YOU MORE WITH CAPACITORS IN AC CIRCUITS	96	99	92
C 109 C1-18 DO YOU MORE WITH CAPACITORS IN CIRCUITS WITH BOTH AC AND DC	95	99	88
C 110 C1-19 DO YOU MORE WITH CAPACITORS IN DON'T REMEMBER WHICH CIRCUITS	17	20	13
C 111 C1-20 DO YOU CALCULATE CAPACITANCE FOR PARTICULAR CAPACITORS USING FORMULAS	26	32	15
C 112 C1-21 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS DIRECTLY PROPORTIONAL TO THE DIELECTRIC CONSTANT	19	21	15
C 113 C1-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS INVERSELY PROPORTIONAL TO THE DIELECTRIC THICKNESS	20	24	13
C 114 C1-23 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES	40	48	25
C 115 C1-24 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN PARALLEL	40	48	25
C 116 C1-25 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES-PARALLEL CIRCUITS	36	45	20
C 117 C1-26 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT DOES NOT FLOW THROUGH CAPACITORS. IT ONLY APPEARS TO DO SO	61	73	40
C 118 C1-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEAKS VOLTAGE IN AC CAPACITOR CIRCUITS	47	55	32
C 119 C1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITIVE REACTANCE IS INVERSELY PROPORTIONAL TO FREQUENCY	37	42	27
C 120 C1-29 DO YOU CALCULATE CAPACITIVE REACTANCE	29	35	17

CAPACITORS AND CAPACITIVE REACTANCE

PCP HARS RESPONDING 'TLS' BY SELECTED GRPS

GPSUM1 PAGE 4

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC
001 002 003

01-TSK

C 121 C1-20 00 YOU MORE WITH MOTOR-STATOR (VARIABLE) CAPACITORS
C 122 C1-31 00 YOU MORE WITH COMPRESSION (VARIABLE) CAPACITORS
C 123 C1-32 00 YOU MORE WITH ELECTROLYTIC (FIXED) CAPACITORS
C 124 C1-33 00 YOU MORE WITH PAPER (FIXED) CAPACITORS
C 125 C1-44 00 YOU MORE WITH MICA (FIXED) CAPACITORS
C 126 C1-35 00 YOU MORE WITH CERAMIC (FIXED) CAPACITORS
C 127 C1-36 00 YOU MORE WITH DON'T REMEMBER WHICH TYPE OF CAPACITORS

C 128 C2-01 00 YOU MORE WITH TRANSFORMERS IN YOUR PRESENT JOB
C 129 C2-02 00 YOU INSPECT TRANSFORMERS
C 130 C2-03 00 YOU CLEAN TRANSFORMERS
C 131 C2-04 00 YOU ADJUST TRANSFORMERS
C 132 C2-05 00 YOU TROUBLESHOOT TRANSFORMERS
C 133 C2-06 00 YOU REMOVE OR REPLACE COMPLETE TRANSFORMERS
C 134 C2-07 00 YOU REMOVE OR REPLACE TRANSFORMER PARTS, SUCH AS THE PRIMARY WINDING
C 135 C2-08 00 YOU MAKE A DISTINCTION BETWEEN MUTUAL INDUCTANCE AND MUTUAL INDUCTANCE (M)
C 136 C2-09 00 YOU USE THE SYMBOL FOR MUTUAL INDUCTANCE, M
C 137 C2-10 00 YOU REFER TO OR USE THE COEFFICIENT OF COUPLING WHEN WORKING WITH TRANSFORMERS
C 138 C2-11 00 YOU CALCULATE TURNS RATIOS FOR TRANSFORMERS USING CURRENT OR VOLTAGE RATIOS
C 139 C2-12 00 YOU REFER TO REFLECTED IMPEDANCE WHEN WORKING WITH TRANSFORMERS
C 140 C2-13 00 YOU CALCULATE IMPEDANCE INTERACTIONS FOR TRANSFORMERS
C 141 C2-14 00 YOU MORE WITH AUTOTRANSFORMERS
C 142 C2-15 00 YOU MORE WITH POWER TRANSFORMERS
C 143 C2-16 00 YOU MORE WITH AUDIO TRANSFORMERS
C 144 C2-17 00 YOU MORE WITH RADIO FREQUENCY TRANSFORMERS
C 145 C2-18 00 YOU MORE WITH DON'T REMEMBER WHAT TYPE OF TRANSFORMERS

C 146 C2-19 00 YOU CHECK TRANSFORMERS FOR OPEN WINDINGS BY MEASURING RESISTANCE
C 147 C2-20 00 YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING RESISTANCE
C 148 C2-21 00 YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING OUTPUT VOLTAGES
C 149 C2-22 00 YOU MEASURE RESISTANCE OF TRANSFORMER WINDINGS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO
C 150 C2-23 00 YOU MEASURE OUTPUT VOLTAGE OF TRANSFORMERS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO
C 151 C2-24 00 YOU REFER TO BASIC TRANSFORMER SCHEMATIC SYMBOLS FOR TRANSFORMERS

TRANSFORMERS

90 92 88
93 93 92
94 94 92
84 84 82
86 90 80
95 94 95
6 7 5
9 4 0
5 7 2
18 24 7
32 38 20
21 28 7
13 17 5
75 83 72
89 92 85
66 69 60
70 76 60
14 14 13
94 93 95
88 87 90
84 86 80
41 44 35
60 68 97
95 94 95

PCT HARS RESPONDING 'YES' BY SELECTED SOPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

D-715.

	SPC 001	SPC 002	SPC 003
C 152 C2-25 DO YOU REFER TO MULTIPLE SECONDARY-WINDINGS SCHEMATIC SYMBOLS FOR TRANSFORMERS	86	85	88
C 153 C2-26 DO YOU REFER TO MULTIPLE TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS	89	89	90
C 154 C2-27 DO YOU REFER TO CENTER TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS	95	94	95
C 155 C2-28 DO YOU REFER TO AIR CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS	71	75	65
C 156 C2-29 DO YOU REFER TO IRON CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS	74	77	67
C 157 C2-30 DO YOU REFER TO COMBINATIONS OF THE ABOVE SCHEMATIC SYMBOLS FOR TRANSFORMERS	79	80	77
C 158 C2-31 DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING SCHEMATIC SYMBOLS	54	59	50
C 159 C2-32 DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN TRANSFORMERS YOU WORK WITH	91	99	25
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	39	95	27
C 161 C2-34 DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN RATIOS FOR TRANSFORMERS	63	70	50
C 162 C2-35 DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS USING TURNS RATIOS	27	30	22
C 163 C2-36 DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS USING TURNS RATIOS	22	25	15
C 164 C2-37 DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH THREE PHASE TRANSFORMERS	21	24	15
C 165 C2-38 DO YOU INSPECT THREE PHASE TRANSFORMERS	14	20	10
C 166 C2-39 DO YOU CLEAN OR LUBRICATE THREE PHASE TRANSFORMERS	12	17	2
C 167 C2-40 DO YOU ADJUST THREE PHASE TRANSFORMERS	12	17	2
C 168 C2-41 DO YOU TROUBLESHOOT THREE PHASE TRANSFORMERS	15	14	10
C 169 C2-42 DO YOU REMOVE OR REPLACE COMPLETE THREE PHASE TRANSFORMERS	14	18	13
C 170 C2-43 DO YOU REMOVE OR REPLACE THREE PHASE TRANSFORMER PARTS SUCH AS WINDINGS	4	4	2
C 171 C3-01 DO YOU USE OR REFER TO PERMANENT MAGNETS	47	85	77
C 172 C3-02 DO YOU USE OR REFER TO TEMPORARY MAGNETS	44	49	35
C 173 C3-03 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS	20	27	7
C 174 C3-04 DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC MATERIALS	19	25	7
C 175 C3-05 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS	23	32	7
C 176 C3-06 DO YOU USE OR REFER TO RESIDUAL MAGNETISM	23	28	13
C 177 C3-07 DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE OR FLUX	54	65	35
C 178 C3-08 DO YOU USE OR REFER TO WIEDEM'S THEORY OF MAGNETISM	11	15	2

MAGNETISM

PCY HANS RESPONDING YES BY SELECTED CMPS

GPSUM PAGE 8

TABLE GROUP SUMMARY PLACENT MEMBERS PERFORMING

07-154

	SPC 001	SRC 002	SPC 003
C 179 C3-09 DO YOU USE OR REFER TO OBTAIN THEORY OF MAGNETISM	11	15	2
C 180 C3-10 DO YOU USE OR REFER TO MAGNETIC INDUCTION	39	42	32
C 181 C3-11 DO YOU USE OR REFER TO FIVE DENSITY	30	39	13
C 182 C3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT FOR	64	69	55
MAGNETIC POLES LIKE POLES REPEL AND UNLIKE POLES ATTRACT			
C 183 C3-13 DO YOU USE THE LEFT-HAND THUMB RULE TO FIND THE	37	44	13
DIRECTION OF MAGNETIC FIELDS ABOUT STRAIGHT WIRES			
C 184 C3-14 DO YOU USE THE LEFT-HAND THUMB RULE TO FIND THE NORTH	37	42	13
POLE OF A CURRENT-CARRYING COIL			
C 185 C1-01 DO YOU WORK WITH RCL LMS RCL CIRCUITS IN YOUR	73	79	63
PRESENT JOB			
C 186 C1-02 DO YOU USE OR REFER TO VICTIMS WHEN WORKING WITH RCL	19	27	5
CIRCUITS			
C 187 C1-03 DO YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN	14	21	5
WORKING WITH RCL CIRCUITS			
C 188 C1-04 DO YOU USE OR REFER TO SINE WHEN WORKING WITH RCL	22	31	5
CIRCUITS			
C 189 C1-05 DO YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL	23	31	7
CIRCUITS			
C 190 C1-06 DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL	19	27	5
CIRCUITS			
C 191 C1-07 DO YOU USE OR REFER TO WATTS WHEN WORKING WITH RCL	55	63	40
CIRCUITS			
C 192 C1-08 DO YOU USE OR REFER TO TUL POWER IPTI WHEN WORKING	41	49	25
WITH RCL CIRCUITS			
C 193 C1-09 DO YOU USE OR REFER TO MAXIMUM POWER (PM) WHEN	41	48	30
WORKING WITH RCL CIRCUITS			
C 194 C1-10 DO YOU USE OR REFER TO AVERAGE POWER (PAVE) WHEN	51	61	35
WORKING WITH RCL CIRCUITS			
C 195 C1-11 DO YOU USE OR REFER TO APPARENT POWER (PA) WHEN	34	42	20
WORKING WITH RCL CIRCUITS			
C 196 C1-12 DO YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING	37	44	25
WITH RCL CIRCUITS			
C 197 C1-13 DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN	59	66	47
WORKING WITH RCL CIRCUITS			
C 198 C1-14 DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH	69	79	52
RCL CIRCUITS			
C 199 C1-15 DO YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH	53	63	35
RCL CIRCUITS			
C 200 C1-16 DO YOU USE OR REFER TO RESONANT FREQUENCY WHEN	66	76	47
WORKING WITH RCL CIRCUITS			
C 201 C1-17 DO YOU USE OR REFER TO HALF-POWER POINTS WHEN	59	68	45
WORKING WITH RCL CIRCUITS			
C 202 C1-18 DO YOU USE OR REFER TO BANDPASS REGION WHEN WORKING	57	61	50
WITH RCL CIRCUITS			
C 203 C1-19 DO YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH	41	44	38
RCL CIRCUITS			

RCL CIRCUITS

PCT AIDS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC 001	SPC 002	SPC 003
U 200 01-20 00 YOU USE OR REFER TO TANK CIRCUITS WHEN WORKING WITH RCL CIRCUITS	64	77	55
U 205 01-21 00 YOU OBTAIN TIME VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS	16	21	7
U 206 01-22 00 YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS	12	17	2
U 207 01-23 00 YOU CALCULATE TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS	22	30	7
U 208 01-24 00 YOU CALCULATE PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS	18	25	5
U 209 01-25 00 YOU CALCULATE TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS	22	31	5
U 210 01-26 00 YOU CALCULATE IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS	14	21	0
U 211 01-27 00 YOU CALCULATE APPARENT POWER (PA) FOR SERIES RCL CIRCUITS	17	27	0
U 212 01-28 00 YOU CALCULATE TRUE POWER (PT) FOR SERIES RCL CIRCUITS	17	27	0
U 213 01-29 00 YOU CALCULATE POWER FACTORS (PF) FOR SERIES RCL CIRCUITS	20	31	0
U 214 01-30 00 YOU CALCULATE TOTAL CURRENT FOR PARALLEL RCL CIRCUITS	25	35	7
U 215 01-31 00 YOU CALCULATE IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS	14	23	0
U 216 01-32 00 YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING THE ASSUMED VOLTAGE METHOD	18	27	2
U 217 01-33 00 YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING OHM'S LAW	22	32	2
U 218 01-34 00 YOU CHECK CAPACITORS USING OHMMETERS	74	79	65
U 219 01-35 00 YOU CHECK CAPACITORS USING SUBSTITUTION	52	56	45
U 220 01-36 00 YOU CHECK INDUCTORS USING OHMMETERS	73	76	67
U 221 01-37 00 YOU CHECK INDUCTORS USING SUBSTITUTION	44	48	38
U 222 01-38 00 YOU USE OR REFER TO THE GENERAL RULE THAT $\tan \theta = \frac{X_L}{R}$ AND $\frac{X_C}{R}$ FOR RESONANT CIRCUITS	14	18	5
U 223 01-39 00 YOU CALCULATE RESONANT FREQUENCIES FOR RCL CIRCUITS	25	34	10
U 224 01-40 00 YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE RESONANT FREQUENCY FOR SERIES RCL CIRCUITS	30	37	17
U 225 01-41 00 YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT RESONANT FREQUENCY FOR PARALLEL RCL CIRCUITS	30	35	20
U 226 01-42 00 YOU USE OR REFER TO THE GENERAL RULE THAT HALF POWER POINTS ARE AT 70.7 PERCENT OF THE PEAK CURRENT VALUE	51	58	40
U 227 01-43 00 YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO Q	30	35	20
U 228 01-44 00 YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE, CAPACITANCE, OR INDUCTANCE WILL AFFECT CURRENT OR PHASE ANGLES FOR RCL CIRCUITS	28	35	15

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

07-15A

	SPC 001	SPC 002	SPC 003	SERIES AND PARALLEL RESONANCE (TIME CONSTANTS)
U 229 02-01 IN YOUR PRESENT JOB, DO YOU WORK WITH USE, OR REFER TO SERIES OR PARALLEL RESONANT CIRCUITS OR TIME CONSTANTS	57	63	45	
U 230 02-02 DO YOU WORK WITH USE, OR REFER TO TIME CONSTANTS	53	59	42	
U 231 02-03 DO YOU WORK WITH USE, OR REFER TO AVAILABLE VOLTAGE	30	32	25	
U 232 02-04 DO YOU WORK WITH USE, OR REFER TO TRANSIENT INTERVALS				
U 233 02-05 DO YOU USE OR REFER TO THE GENERAL RULE THAT A CAPACITOR IS FULLY CHARGED 100 DISCHARGED AFTER FIVE (5) TIME CONSTANTS (TC)	43	51	30	
U 234 02-06 DO YOU USE OR REFER TO UNIVERSAL TIME CONSTANT CHARTS	17	23	7	
U 235 02-07 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CIRCUIT CURRENT OR COMPONENT VOLTAGES AFTER A SPECIFIC TIME FOR RC OR LR CIRCUITS	16	21	7	
U 236 02-08 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE THE TIME REQUIRED FOR CIRCUIT CURRENT OR COMPONENT VOLTAGES TO REACH SPECIFIC VALUES FOR RC OR LR CIRCUITS	16	23	5	
U 237 02-09 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE COMPONENT VALUES REQUIRED FOR CIRCUIT CURRENT AND COMPONENT VOLTAGES TO REACH SPECIFIC VALUES IN SPECIFIC TIMES	17	24	5	
U 238 02-10 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT IN LR CIRCUITS REACHES ITS MINIMUM VALUE 100 AFTER FIVE (5) TIME CONSTANTS	21	28	7	
U 239 03-01 DO YOU WORK WITH CIRCUITS USED AS FILTERS IN YOUR PRESENT JOB	75	83	60	
U 240 03-02 DO YOU INSPECT FILTER CIRCUITS	76	83	63	
U 241 03-03 DO YOU CLEAN FILTER CIRCUITS	68	73	60	
U 242 03-04 DO YOU ALIGN OR ADJUST FILTER CIRCUITS	57	65	42	
U 243 03-05 DO YOU TROUBLESHOOT TO THE FILTER CIRCUIT LEVEL	73	80	60	
U 244 03-06 DO YOU TROUBLESHOOT TO COMPONENT PARTS	75	82	63	
U 245 03-07 DO YOU REMOVE OR REPLACE THE COMPLETE FILTER CIRCUIT	68	75	55	
U 246 03-08 DO YOU REMOVE OR REPLACE FILTER CIRCUIT COMPONENT PARTS	74	80	63	FILTERS
U 247 03-09 DO YOU WORK WITH LOW PASS FILTERS	75	85	57	
U 248 03-10 DO YOU WORK WITH HIGH PASS FILTERS	74	85	58	
U 249 03-11 DO YOU WORK WITH BANDPASS FILTERS	70	80	52	
U 250 03-12 DO YOU WORK WITH BAND-REJECT FILTERS	50	61	32	
U 251 03-13 DON'T REMEMBER WHICH TYPE OF FILTER YOU WORK WITH	11	11	10	
U 252 03-14 DO YOU WORK WITH L-SECTION FILTER CONFIGURATION	65	75	47	
U 253 03-15 DO YOU WORK WITH T-SECTION FILTER CONFIGURATION	67	75	52	
U 254 03-16 DO YOU WORK WITH PI-SECTION FILTER CONFIGURATION	59	66	47	
U 255 03-17 DON'T REMEMBER WHICH TYPE FILTER CONFIGURATION	14	14	13	
U 256 03-18 DO THE FILTERS YOU WORK WITH USE PARALLEL RESONANT CIRCUITS	57	63	45	
U 257 03-19 DO THE FILTERS YOU WORK WITH USE SERIES-PARALLEL CIRCUITS	60	69	45	
U 258 03-20 DO THE FILTERS YOU WORK WITH USE SERIES RESONANT CIRCUITS	58	65	45	

PCT HARS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSR

SPC SPC SPC
001 002 00320 21 17
17 25 2

U 259 03-21 00N'T REMEMBER WHICH TYPE OF BASIC CIRCUIT
U 260 03-22 00 YOU USE EQUATIONS OR FORMULAS TO DETERMINE
CAPACITANCE OR INDUCTANCE VALUES REQUIRED FOR SPECIFIC
FILTERS

77 85 63
76 83 63

L 261 01-01 00 YOU WORK WITH COUPLING DEVICES IN YOUR PRESENT JOB
L 262 01-02 00 YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO
THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH RC
COUPLING

68 73 57

L 263 01-03 00 YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO
THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH
IMPEDANCE COUPLING

77 85 65

L 264 01-04 00 YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO
THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH
TRANSFORMER COUPLING

COUPLING

76 83 63

L 265 01-05 00 YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS
WHICH PERFORM RC COUPLING

68 73 57

L 266 01-06 00 YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS
WHICH PERFORM IMPEDANCE COUPLING

77 85 65

L 267 01-07 00 YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS
WHICH PERFORM TRANSFORMER COUPLING

75 82 63

L 268 01-08 00 YOU WORK WITH DIRECTLY COUPLED CIRCUITS
L 269 01-09 00 YOU WORK WITH CAPACITIVE-RESISTIVE COUPLED
CIRCUITS

69 77 55

L 270 01-10 00 YOU WORK WITH CAPACITIVE-INDUCTIVE COUPLED
CIRCUITS

62 70 47

L 271 01-11 00 YOU WORK WITH TRANSFORMER COUPLED CIRCUITS
L 272 01-12 00N'T REMEMBER WHICH TYPE OF COUPLING CIRCUITS

74 82 65
12 11 13

L 273 02-01 IN YOUR PRESENT JOB, DO YOU PERFORM SOLDERING
TECHNIQUES OR INSPECT OR EVALUATE SOLDERED CONNECTIONS

94 94 92

L 274 02-02 00 YOU SELECT TYPE OF SOLDER TO USE
L 275 02-03 00 YOU ADD FLUX TO CONNECTIONS

75 79 67
90 94 82

L 276 02-04 00 YOU CLEAN CONNECTIONS USING SOLVENTS
L 277 02-05 00 YOU STRIP INSULATION FROM WIRES

91 93 88

L 278 02-06 00 YOU CONNECT OR DISCONNECT WIRE SINKS
L 279 02-07 00 YOU BEND OR SHAPE WIRES OR LEADS

96 97 95
96 97 95

L 280 02-08 00 YOU CUT WIRES
L 281 02-09 00 YOU FILE OR SHAPE SOLDERING IRON TIPS

96 97 95
96 97 95

L 282 02-10 00 YOU TIN SOLDERING IRON TIPS
L 283 02-11 00 YOU CLEAN SOLDERING IRON TIPS

96 97 95
91 93 88

L 284 02-12 00 YOU CLEAN ELECTRICAL SURFACES USING ERASERS
L 285 02-13 00 YOU TIN OR PRE-TIN CONDUCTORS

94 94 92
95 97 92

L 286 02-14 00 YOU INSPECT SOLDERED CONNECTIONS
L 287 02-15 00 YOU RESOLDER CONNECTIONS BY WICKING
L 288 02-16 00 YOU DESOLDER CONNECTIONS USING VACUUM DESOLDERING
TOOLS

SOLDERING

77 86 63

L 289 02-17 00 YOU CUT COMPONENT LEADS TO REMOVE COMPONENTS
L 290 02-18 00 YOU CRUSH COMPONENTS FOR REMOVAL

77 79 75
24 30 15

PER NUMS RESPONDING YES BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

0V-15K

SPC SPC SPC
001 002 003

L 291 12-19 DO YOU MAKE WIREWIRE CONNECTIONS
L 292 12-20 DO YOU MAKE PRINTED CIRCUIT BOARD CONNECTIONS
L 293 12-21 DO YOU SOLDER PASSIVE COMPONENTS SUCH AS RESISTORS OR CAPACITORS ON PRINTED CIRCUIT BOARDS
L 294 12-22 DO YOU SOLDER ACTIVE COMPONENTS SUCH AS SOLID-STATE DIODES OR TRANSISTORS ON PRINTED CIRCUIT BOARDS

RELAYS

SPC SPC SPC
001 002 003

L 295 13-01 DO YOU WORK WITH RELAYS IN YOUR PRESENT JOB
L 296 13-02 DO YOU ADJUST RELAYS
L 297 13-03 DO YOU CLEAN RELAYS
L 298 13-04 DO YOU INSPECT RELAYS
L 299 13-05 DO YOU REMOVE OR REPLACE COMPLETE RELAYS
L 300 13-06 DO YOU REMOVE OR REPLACE PARTS OF RELAYS
L 301 13-07 DO YOU TROUBLESHOOT RELAYS
L 302 13-08 DO YOU STRAIGHTEN RELAY CONTACTS
L 303 13-09 DO YOU PERFORM TASKS ON RELAY CONTACTS
L 304 13-10 DO YOU PERFORM TASKS ON RELAY COILS
L 305 13-11 DO YOU PERFORM TASKS ON RELAY COILS
L 306 13-12 DO YOU PERFORM TASKS ON RELAY ARMATURES
L 307 13-13 DO YOU PERFORM TASKS ON RELAY SPRINGS
L 308 13-14 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY OPEN (NO) SCHEMATIC SYMBOLS FOR RELAYS
L 309 13-15 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY CLOSED (NC) SCHEMATIC SYMBOLS FOR RELAYS
L 310 13-16 DO YOU USE OR REFER TO SINGLE POLE, DOUBLE THROW (SPDT) SCHEMATIC SYMBOLS FOR RELAYS
L 311 13-17 DO YOU USE OR REFER TO DOUBLE POLE, DOUBLE THROW (DPDT) SCHEMATIC SYMBOLS FOR RELAYS
L 312 13-18 DO YOU USE OR REFER TO OTHER RELAY SYMBOLS SCHEMATIC SYMBOLS FOR RELAYS
L 313 13-19 DO YOU CHECK ELECTRICAL CONTINUITY OF COILS BY MEASURING RESISTANCE

SPC SPC SPC
001 002 003

L 314 14-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH MICROPHONES
L 315 14-02 DO YOU INSPECT MICROPHONES
L 316 14-03 DO YOU CLEAN MICROPHONES
L 317 14-04 DO YOU OPERATE MICROPHONES
L 318 14-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT PARTS OR MICROPHONES

MICROPHONES

SPC SPC SPC
001 002 003

L 319 14-06 DO YOU TROUBLESHOOT DOWN TO MICROPHONE PARTS
L 320 14-07 DO YOU REMOVE OR REPLACE COMPLETE MICROPHONES
L 321 14-08 DO YOU REMOVE OR REPLACE MICROPHONE PARTS
L 322 14-09 DO YOU PERFORM TASKS ON CARBON MICROPHONES
L 323 14-10 DO YOU PERFORM TASKS ON CAPACITOR MICROPHONES
L 324 14-11 DO YOU PERFORM TASKS ON CRYSTAL MICROPHONES
L 325 14-12 DO YOU PERFORM TASKS ON DYNAMIC MICROPHONES
L 326 14-13 DO YOU PERFORM TASKS ON VELOCITY RIBBON MICROPHONES

SPC SPC SPC
001 002 003

PC1 MARS RESPONDING YES BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

01-150

1 226 12-01 DO YOU PERFORM ANY TASKS DEALING
 WITH SPEAKERS
 1 226 12-02 DO YOU INSPECT SPEAKERS
 1 226 12-03 DO YOU CLEAN SPEAKERS
 1 226 12-04 DO YOU OPERATE SPEAKERS
 1 226 12-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE
 CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT
 PARTS OF SPEAKERS

SPEAKERS

1 227 12-06 DO YOU TROUBLESHOOT DOWN TO SPEAKER PARTS
 1 227 12-07 DO YOU REMOVE OR REPLACE COMPLETE SPEAKERS
 1 227 12-08 DO YOU REMOVE OR REPLACE SPEAKER PARTS
 1 227 12-09 DO YOU PERFORM ANY TASKS ON SPEAKER CONES
 1 227 12-10 DO YOU PERFORM ANY TASKS ON SPEAKER SPOILERS
 1 227 12-11 DO YOU PERFORM ANY TASKS ON SPEAKER FIELD COILS
 1 227 12-12 DO YOU PERFORM ANY TASKS ON SPEAKER VOICE COILS
 1 227 12-13 DO YOU PERFORM ANY TASKS ON SPEAKER PERMANENT MAGNETS
 1 227 12-14 DO YOU PERFORM ANY TASKS ON SPEAKER ELECTROMAGNETS
 1 227 12-15 DO YOU PERFORM ANY TASKS ON SPEAKER SOFT IRON CORES

1 227 12-01 DO YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB
 1 227 12-02 DO YOU USE OSCILLOSCOPES TO PERFORM OPERATIONAL
 CHECKS

1 227 12-03 DO YOU USE OSCILLOSCOPES TO PERFORM ALIGNMENTS OR
 ADJUSTMENTS

1 227 12-04 DO YOU USE OSCILLOSCOPES TO TROUBLESHOOT ELECTRONIC
 CIRCUITS

1 227 12-05 DO YOU USE OSCILLOSCOPES TO MEASURE FREQUENCY
 1 227 12-06 DO YOU USE OSCILLOSCOPES TO MEASURE TIME
 1 227 12-07 DO YOU USE OSCILLOSCOPES TO OBSERVE LISAJOUS PATTERNS
 1 227 12-08 DO YOU USE OSCILLOSCOPES TO OBSERVE SIGNALS WHILE
 UTILIZING ATTENUATOR PROBES

1 227 12-09 DO YOU USE OSCILLOSCOPES TO MAKE FREQUENCY OR TIME
 MEASUREMENTS USING DELAY TIME MULTIPLIERS

1 227 12-10 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE
 1 227 12-11 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE
 1 227 12-12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE
 1 227 12-13 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE

1 227 12-01 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT
 JOB

1 227 12-02 DO YOU INSPECT DIODES
 1 227 12-03 DO YOU REMOVE OR REPLACE DIODES
 1 227 12-04 DO YOU CHECK DIODES USING AN INSTRUMENT
 1 227 12-05 DO YOU USE ENERGY LEVEL DIAGRAM IN YOUR WORK WITH
 DIODES

1 227 12-06 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES,
 TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE,
 TO COMPUTE FORWARD OR REVERSE BIAS RESISTANCE
 1 227 12-07 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR
 DIODES

1 227 12-08 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE
 1 227 12-09 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE
 1 227 12-10 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE
 1 227 12-11 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE
 1 227 12-12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE
 1 227 12-13 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE

1 227 12-01 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT
 JOB

1 227 12-02 DO YOU INSPECT DIODES
 1 227 12-03 DO YOU REMOVE OR REPLACE DIODES
 1 227 12-04 DO YOU CHECK DIODES USING AN INSTRUMENT
 1 227 12-05 DO YOU USE ENERGY LEVEL DIAGRAM IN YOUR WORK WITH
 DIODES

1 227 12-06 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES,
 TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE,
 TO COMPUTE FORWARD OR REVERSE BIAS RESISTANCE
 1 227 12-07 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR
 DIODES

1 227 12-08 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE
 1 227 12-09 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE
 1 227 12-10 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE
 1 227 12-11 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE
 1 227 12-12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE
 1 227 12-13 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE

1 227 12-01 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT
 JOB

1 227 12-02 DO YOU INSPECT DIODES
 1 227 12-03 DO YOU REMOVE OR REPLACE DIODES
 1 227 12-04 DO YOU CHECK DIODES USING AN INSTRUMENT
 1 227 12-05 DO YOU USE ENERGY LEVEL DIAGRAM IN YOUR WORK WITH
 DIODES

1 227 12-06 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES,
 TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE,
 TO COMPUTE FORWARD OR REVERSE BIAS RESISTANCE
 1 227 12-07 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR
 DIODES

1 227 12-08 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE
 1 227 12-09 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE
 1 227 12-10 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE
 1 227 12-11 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE
 1 227 12-12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE
 1 227 12-13 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE

1 227 12-01 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT
 JOB

1 227 12-02 DO YOU INSPECT DIODES
 1 227 12-03 DO YOU REMOVE OR REPLACE DIODES
 1 227 12-04 DO YOU CHECK DIODES USING AN INSTRUMENT
 1 227 12-05 DO YOU USE ENERGY LEVEL DIAGRAM IN YOUR WORK WITH
 DIODES

1 227 12-06 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES,
 TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE,
 TO COMPUTE FORWARD OR REVERSE BIAS RESISTANCE
 1 227 12-07 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR
 DIODES

1 227 12-08 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE
 1 227 12-09 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE
 1 227 12-10 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE
 1 227 12-11 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE
 1 227 12-12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE
 1 227 12-13 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE

1 227 12-01 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT
 JOB

1 227 12-02 DO YOU INSPECT DIODES
 1 227 12-03 DO YOU REMOVE OR REPLACE DIODES
 1 227 12-04 DO YOU CHECK DIODES USING AN INSTRUMENT
 1 227 12-05 DO YOU USE ENERGY LEVEL DIAGRAM IN YOUR WORK WITH
 DIODES

1 227 12-06 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES,
 TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE,
 TO COMPUTE FORWARD OR REVERSE BIAS RESISTANCE
 1 227 12-07 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR
 DIODES

1 227 12-08 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE
 1 227 12-09 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE
 1 227 12-10 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE
 1 227 12-11 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE
 1 227 12-12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE
 1 227 12-13 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE

1 227 12-01 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT
 JOB

1 227 12-02 DO YOU INSPECT DIODES
 1 227 12-03 DO YOU REMOVE OR REPLACE DIODES
 1 227 12-04 DO YOU CHECK DIODES USING AN INSTRUMENT
 1 227 12-05 DO YOU USE ENERGY LEVEL DIAGRAM IN YOUR WORK WITH
 DIODES

1 227 12-06 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES,
 TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE,
 TO COMPUTE FORWARD OR REVERSE BIAS RESISTANCE
 1 227 12-07 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR
 DIODES

1 227 12-08 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE
 1 227 12-09 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE
 1 227 12-10 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE
 1 227 12-11 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE
 1 227 12-12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE
 1 227 12-13 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE

1 227 12-01 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT
 JOB

1 227 12-02 DO YOU INSPECT DIODES
 1 227 12-03 DO YOU REMOVE OR REPLACE DIODES
 1 227 12-04 DO YOU CHECK DIODES USING AN INSTRUMENT
 1 227 12-05 DO YOU USE ENERGY LEVEL DIAGRAM IN YOUR WORK WITH
 DIODES

1 227 12-06 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES,
 TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE,
 TO COMPUTE FORWARD OR REVERSE BIAS RESISTANCE
 1 227 12-07 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR
 DIODES

OSCILLOSCOPES

SEMICONDUCTOR DIODES

BASE GROUP SUMMARY
PLACEMENT MEMBERS PERFORMING

DT-TSA

SPC	SPC	SPC
001	002	003
70	75	63
82	89	70
16	21	7
77	72	72
32	35	25
3	4	0
	4	0
11	56	77
5	8	0
4	10	0
71	76	43
7	11	0
7	11	0
4	11	2
4	11	2
82	84	75
27	23	20
45	54	25
19	23	13
64	72	60
9	14	0

361 01-08 DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES
 362 01-09 DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO OTHER ELECTRONIC COMPONENTS, SUCH AS RESISTORS, BASED ON THEIR PHYSICAL APPEARANCE
 363 01-10 DO YOU REFER TO OR DO YOU DETERMINE THE GENERAL EFFECTS OF DOPING ON CURRENT FLOW
 364 01-11 DO YOU USE OR REFER TO MEASUREMENTS OF FORWARD BIAS RESISTANCE
 365 01-12 DO YOU USE OR REFER TO DIODE COLOR CODING
 366 01-13 DO YOU USE OR REFER TO CENTRIFUGAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS
 367 01-14 DO YOU USE OR REFER TO CENTRIPETAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS
 368 01-15 DO YOU USE OR REFER TO DIODE NUMBERING SYSTEMS, SUCH AS 1N538
 369 01-16 DO YOU USE OR REFER TO KINETIC ENERGY OF AN ELECTRON MOVING IN ORBIT
 370 01-17 DO YOU USE OR REFER TO POTENTIAL ENERGY OF AN ELECTRON MOVING IN ORBIT
 371 01-18 DO YOU USE OR REFER TO MEASUREMENTS OF REVERSE BIAS RESISTANCE
 372 01-19 DO YOU USE OR REFER TO NUMBER OF ELECTRONS IN A PARTICULAR SHELL OR ORBIT
 373 01-20 DO YOU USE OR REFER TO PERMISSIBLE ENERGY LEVELS OF AN ORBITING ELECTRON
 374 01-21 DO YOU USE OR REFER TO FORBIDDEN ENERGY LEVELS OF AN ORBITING ELECTRON
 375 01-22 DO YOU USE OR REFER TO VALENCE ELECTRONS ITMOSE IN THE OUTERMOST SHELL
 376 01-23 DO YOU USE OR REFER TO ATOMIC NUMBER (TOTAL NUMBER OF ELECTRONS IN ATOM)
 377 01-24 DO YOU USE OR REFER TO SYMBOLS ON THE DIODE WHICH INDICATE THE CATHODE END
 378 01-25 DO YOU NEED TO KNOW WHICH MATERIALS ARE USED IN THE CONSTRUCTION OF DIODES SUCH AS GERMANIUM OR SILICON
 379 01-26 DO YOU NEED TO KNOW THAT SEMICONDUCTORS HAVE NEGATIVE TEMPERATURE COEFFICIENTS OF RESISTANCE AS TEMPERATURE INCREASES RESISTANCE DECREASES
 380 01-27 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)
 381 01-28 DO YOU DETERMINE WHETHER PN JUNCTION DIODES ARE FORWARD BIASED OR REVERSE BIASED WHEN YOU READ OR INTERPRET CIRCUIT DIAGRAMS
 382 01-29 DO YOU USE OR REFER TO VALENCE BAND IN SEMICONDUCTOR MATERIALS

BASE GROUP SUMMARY
PERCENT MEMBERS PERFORMING

07-75K

SPC SPC SPC
001 002 003

6 383 61-30 DO YOU USE OR REFER TO FORBIDDEN BAND IN SEMICONDUCTOR MATERIALS	0	13	0
6 384 61-31 DO YOU USE OR REFER TO CONDUCTION BAND IN SEMICONDUCTOR MATERIALS	9	14	0
6 385 61-32 DO YOU USE OR REFER TO COVALENT BONDING IN SEMICONDUCTOR MATERIALS	0	13	0
6 386 61-33 DO YOU USE OR REFER TO ELECTRON-HOLE PAIR CREATED IN SEMICONDUCTORS	10	14	2
6 387 61-34 DO YOU USE OR REFER TO ELECTRON FLOW OR HOLE FLOW IN SEMICONDUCTORS	22	27	13
6 388 61-35 DO YOU USE OR REFER TO DONOR IMPURITY IN SEMICONDUCTORS	10	15	0
6 389 61-36 DO YOU USE OR REFER TO ACCEPTOR IMPURITY IN SEMICONDUCTORS	10	15	0
6 390 61-37 DO YOU USE OR REFER TO P-TYPE SEMICONDUCTOR MATERIAL	39	44	30
6 391 61-38 DO YOU USE OR REFER TO N-TYPE SEMICONDUCTOR MATERIAL	38	42	30
6 392 61-39 DO YOU USE OR REFER TO MAJORITY CARRIERS IN SEMICONDUCTORS	14	20	2
6 393 61-40 DO YOU USE OR REFER TO MINORITY CARRIERS IN SEMICONDUCTORS	14	20	2
6 394 61-41 DO YOU USE OR REFER TO JUNCTION RECOMBINATION IN SEMICONDUCTORS	10	14	2
6 395 61-42 DO YOU USE OR REFER TO DEPLETION REGION IN SEMICONDUCTORS	12	17	2
6 396 61-43 DO YOU USE OR REFER TO RELATIONSHIP BETWEEN BARRIER WIDTH AND DIFFERENCE OF POTENTIAL	14	18	5
6 397 61-44 DO YOU USE OR REFER TO T-10:1 BACK TO FRONT RESISTANCE RATIO FOR DIODES	72	73	70
6 398 61-45 DO YOU USE OR REFER TO BARRIER HEIGHT IN SEMICONDUCTORS	13	18	2
6 399 61-46 DO YOU USE OR REFER TO DIODE SUBSTITUTION INFORMATION	53	56	47
6 400 61-47 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD CURRENT DIODE RATINGS	32	39	20
6 401 61-48 DO YOU USE OR REFER TO PIAK RECURRENT FORWARD CURRENT DIODE RATINGS	24	32	15
6 402 61-49 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT VOLTAGE DIODE RATINGS	28	32	20
6 403 61-50 DO YOU USE OR REFER TO PIAK REVERSE (INTERSE) VOLTAGE DIODE RATINGS	34	48	22
6 404 62-01 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB.	87	92	85
6 405 62-02 DO YOU INSPECT TRANSISTORS	84	86	85
6 406 62-03 DO YOU KNOW OR REPLACE TRANSISTORS	89	90	88
6 407 62-04 DO YOU CHECK TRANSISTORS USING AN INSTRUMENT	84	89	82
6 408 62-05 DO YOU USE OR REFER TO EMITTER - BASE (EB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	88	90	85
6 409 62-06 DO YOU USE OR REFER TO COLLECTOR - BASE (CB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	84	90	80

TRANSISTORS

PCF HARS RESPONDING YES BY SELECTED CARDS

BASE GROUP SUMMARY
PERCENT MEMBERS PERFORMING

GPSUM1 PAGE 10

37-75

	SPC 001	SPC 002	SPC 003
6 710 62-01 DO YOU USE OR REFER TO Z-ITTEM - COLLECTOR IECI DISTANCE MEASUREMENTS	84	90	80
6 711 62-08 DO YOU USE OR REFER TO MUX-BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE EMITTER - BASE JUNCTION	30	32	25
6 712 62-09 DO YOU USE OR REFER TO MUX-BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE COLLECTOR - BASE JUNCTION	29	31	25
6 713 62-10 DO YOU USE OR REFER TO THE PHYSICAL SIZE OF THE TRANSISTOR STRUCTURE (COLLECTOR, BASE AND EMITTER)	49	59	30
6 714 62-11 DO YOU USE OR REFER TO LEAKAGE CURRENT (ICBO) IN A TRANSISTOR	24	28	17
6 715 62-12 DO YOU USE OR REFER TO TRANSISTOR SCHEMATIC SYMBOLS	84	87	85
6 716 62-13 DO YOU USE OR REFER TO TRANSISTOR NOTATION SUCH AS Q1, Q2, Q3, ETC	87	90	82
6 717 62-14 DO YOU USE OR REFER TO TRANSISTOR SUBSTITUTION INFORMATION	61	65	55
6 718 62-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE TRANSISTOR BASE CURRENT IS NORMALLY SIGNIFICANTLY SMALLER THAN THE EMITTER CURRENT IE (USUALLY 10 BEING 2 TO 10 PERCENT OF IE)	40	46	27
6 719 62-16 DO YOU USE THE INFORMATION THAT THE EFFECT OF EMITTER BASE VOLTAGE ON BASE CURRENT IS THE CONTROLLING FACTOR FOR TRANSISTORS	51	56	47
6 720 62-17 DO YOU USE THE GENERAL RULE THAT LEAKAGE CURRENT INCREASES AS TEMPERATURE INCREASES	29	35	17
6 721 62-18 DO YOU USE OR REFER TO TRANSISTOR CHARACTERISTIC CURVES	27	27	13
6 722 62-19 DO YOU USE OR REFER TO DELTA TRANSISTOR GAINS	14	20	5
6 723 62-20 DO YOU USE OR REFER TO ALPHA TRANSISTOR GAINS	14	18	5
6 724 62-21 DO YOU USE OR REFER TO GAMMA TRANSISTOR GAINS	13	17	5
6 725 62-22 DO YOU CALCULATE BETA TRANSISTOR GAINS	10	14	2
6 726 62-23 DO YOU CALCULATE ALPHA TRANSISTOR GAINS	10	14	2
6 727 62-24 DO YOU CALCULATE GAMMA TRANSISTOR GAINS	9	13	2
6 728 62-25 DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR PRESENT JOB	77	79	60
6 729 63-02 DO YOU INSPECT TRANSISTOR AMPLIFIERS	67	70	60
6 730 63-03 DO YOU ALIGN OR ADJUST TRANSISTOR AMPLIFIERS	64	64	55
6 731 63-04 DO YOU TROUBLESHOOT TO THE AMPLIFIER CIRCUIT LEVEL	69	76	57
6 732 63-05 DO YOU TROUBLESHOOT TO AMPLIFIER COMPONENTS	70	76	60
6 733 63-06 DO YOU REMOVE OR REPLACE THE COMPLETE AMPLIFIER	62	66	55
6 734 63-07 DO YOU REMOVE OR REPLACE AMPLIFIER COMPONENTS	71	77	60
6 735 63-08 DO YOU USE OR REFER TO COMMON EMITTER THE CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A CHANGE IN BASE CURRENT	43	52	27
6 736 63-09 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	15	23	2

TRANSISTOR AMPLIFIERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

01-TSK

	SPC 001	SPC 002	SPC 003
6 437 63-10 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A CHANGE IN BASE CURRENT	41	99	25
6 438 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	18	28	0
6 439 63-12 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN BASE CURRENT WHICH RESULTS FROM AN INPUT SIGNAL	42	99	30
6 440 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	19	27	5
6 441 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)	4	10	0
6 442 63-15 DO YOU USE OR REFER TO THE OPERATING POINT Q (QUIESCENT POINT) FOR A TRANSISTOR	25	31	15
6 443 63-16 DO YOU CALCULATE THE SPECIFIC QUIESCENT POINT FOR A PARTICULAR TRANSISTOR	9	14	0
6 444 63-17 DO YOU MEASURE VOLTAGE GAIN USED IN THE COMMON EMITTER CONFIGURATION	54	58	47
6 445 63-18 DO YOU MEASURE CURRENT GAIN USED IN THE COMMON EMITTER CONFIGURATION	41	95	32
6 446 63-19 DO YOU MEASURE POWER GAIN USED IN THE COMMON EMITTER CONFIGURATION	34	38	27
6 447 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	16	23	5
6 448 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	13	18	2
6 449 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	12	17	2
6 450 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 Q) OF THE TRANSISTOR)	14	23	5
6 451 63-24 DO YOU COMPUTE THE STATIC OPERATING POINT Q) OF A TRANSISTOR AT DIFFERENT TEMPERATURES	7	11	0
6 452 63-25 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH EMITTER (SWAPPING) RESISTOR STABILIZATION	41	48	27
6 453 63-26 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH SELF-COMPENSATION	35	46	25

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

0V-TSK

SPC 001	SPC 002	SPC 003
454	42	17
455	51	25
456	51	25
457	37	20
458	55	35
459	54	32
460	45	27
461	54	32
462	54	32
463	39	27
464	46	25
465	52	27
466	45	25
467	44	22
468	39	22
469	42	27
470	30	22
471	36	22
472	52	38
473	69	47
474	32	22
475	36	32

454 63-27 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH THERMISTOR STABILIZATION

455 63-28 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH FORWARD BIAS DIODE STABILIZATION

456 63-29 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH REVERSE BIAS DIODE STABILIZATION

457 63-30 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH DOUBLE DIODE STABILIZATION

458 63-31 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM EMITTER ISWAMPLING RESISTOR STABILIZATION

459 63-32 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM SELF-BIAS STABILIZATION

460 63-33 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THERMISTOR STABILIZATION

461 63-34 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM FORWARD BIAS DIODE STABILIZATION

462 63-35 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM REVERSE BIAS DIODE STABILIZATION

463 63-36 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM DOUBLE DIODE STABILIZATION

464 63-37 DO YOU IDENTIFY AMPLITUDE DISTORTION FOR TRANSISTOR CIRCUITS

465 63-38 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF AMPLITUDE DISTORTION

466 63-39 DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS

467 63-40 DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS

468 63-41 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF PHASE DISTORTION

469 63-42 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF FREQUENCY DISTORTION

470 63-43 DO YOU NEED TO KNOW THE DEGENERATIVE EFFECTS ON THE CIRCUIT CAUSED BY CHANGING EMITTER RESISTANCE FOR TRANSISTOR AMPLIFIERS IN THE COMMON COLLECTOR CONFIGURATION

471 63-44 DO YOU DETERMINE THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS

472 63-45 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS

473 63-46 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS

474 63-47 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY CIRCUITS

475 63-48 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS

PER MARS RESPONDING YES BY SELECTED EMPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

01-19-54

SPC SPC SPC
001 002 0036 7% 63-99 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED
AMPLIFIERS

777 71-01 DO YOU USE OR REFER TO VARACTORS
778 71-02 DO YOU USE OR REFER TO TUNNEL DIODES
779 71-03 DO YOU USE OR REFER TO FIELD EFFECT TRANSISTORS (FET)
780 71-04 DO YOU USE OR REFER TO HETEROJUNCTION TRANSISTORS
781 71-05 DO YOU USE OR REFER TO ZENER DIODES
782 71-06 DO YOU USE OR REFER TO INTEGRATED CIRCUITS

783 72-01 IN YOUR PRESENT JOB, DO YOU WORK WITH POWER SUPPLIES
784 72-02 DO YOU INSPECT POWER SUPPLIES
785 72-03 DO YOU CLEAN POWER SUPPLIES
786 72-04 DO YOU ALIGN OR ADJUST POWER SUPPLIES
787 72-05 DO YOU TROUBLESHOOT TO POWER SUPPLY CIRCUIT LEVEL
788 72-06 DO YOU TROUBLESHOOT TO POWER SUPPLY COMPONENTS
789 72-07 DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES
790 72-08 DO YOU REMOVE OR REPLACE POWER SUPPLY COMPONENTS
791 72-09 DO YOU WORK WITH HALF-WAVE RECTIFIERS
792 72-10 DO YOU WORK WITH FULL-WAVE RECTIFIERS OTHER THAN
BRIDGE RECTIFIERS

793 72-11 DO YOU WORK WITH BRIDGE RECTIFIERS
794 72-12 DO YOU WORK WITH THREE-PHASE RECTIFIERS
795 72-13 DO YOU USE OR REFER TO INPUT VOLTAGE
796 72-14 DO YOU USE OR REFER TO INPUT FREQUENCY
797 72-15 DO YOU USE OR REFER TO PEAK OUTPUT VOLTAGE
798 72-16 DO YOU USE OR REFER TO AVERAGE OUTPUT VOLTAGE
799 72-17 DO YOU USE OR REFER TO RIPPLE AMPLITUDE
800 72-18 DO YOU USE OR REFER TO RIPPLE FREQUENCY
801 72-19 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE
802 72-20 DO YOU USE OR REFER TO SHAPE OF OUTPUT WAVEFORMS
803 72-21 DO YOU USE OR REFER TO EFFECTIVE OUTPUT VOLTAGE
804 72-22 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE
FILTERS
805 72-23 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE
FILTERS
806 72-24 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE
INPUT LC-TYPE FILTERS
807 72-25 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE
INPUT LC-TYPE FILTERS
808 72-26 DO YOU WORK WITH CIRCUITS WHICH EMPLOY LC PI-TYPE
FILTERS
809 72-27 DO YOU WORK WITH CIRCUITS WHICH EMPLOY RC PI-TYPE
FILTERS
810 72-28 DO YOU WORK WITH CIRCUITS WHICH EMPLOY BAND
PASS FILTERS WHICH TYPE OF FILTER
811 72-29 DO YOU HAVE THE OPTION OF REPLACING ONE TYPE OF
FILTER WITH A DIFFERENT TYPE FILTER
812 73-01 DO YOU WORK WITH OSCILLATORS IN YOUR PRESENT JOB

SOLID-STATE SPECIAL PURPOSE DEVICES

POWER SUPPLIES

OSCILLATORS

PLT WARS RESPONDING YES BY SELECTED GPS

TASK GROUP SUMMARY
PLCANT MEMBERS MEMORISING

01-154

SPC 001	SPC 002	SPC 003
71	73	67
64	70	52
66	72	65
68	72	63
74	77	67
71	73	67
66	69	60
63	72	47
59	59	45
57	61	50
66	75	50
62	68	52
24	30	20
41	51	25
48	61	25
58	68	40
62	70	47
59	68	42
13	10	17
39	44	30
37	42	27
41	44	35
31	39	15
27	35	13
32	30	38
74	83	57
65	75	47
63	75	42
59	69	42
67	75	52
73	82	57
59	63	52
68	76	55
55	61	45

513 11-02 DO YOU INSPECT OSCILLATORS
 514 11-03 DO YOU ALIGN ON ADJUST OSCILLATORS
 515 11-04 DO YOU REMOVE OR REPLACE COMPLETE OSCILLATORS
 516 11-05 DO YOU REMOVE OR REPLACE OSCILLATOR COMPONENTS
 517 11-06 DO YOU TROUBLESHOOT TO OSCILLATOR CIRCUIT LEVEL
 518 11-07 DO YOU TROUBLESHOOT TO OSCILLATOR COMPONENTS
 519 11-08 DO YOU USE OR REFER TO FEEDBACK
 520 11-09 DO YOU USE OR REFER TO FREQUENCY DETERMINING DEVICES
 521 11-10 DO YOU USE OR REFER TO AMPLITUDE STABILITY
 522 11-11 DO YOU USE OR REFER TO FREQUENCY STABILITY
 523 11-12 DO YOU USE OR REFER TO DAMPING
 524 11-13 DO YOU USE OR REFER TO REGenerative FEEDBACK
 525 11-14 DO YOU USE OR REFER TO PIEZOELECTRIC EFFECT
 526 11-15 DO YOU USE OR REFER TO CRITICAL DAMPING
 527 11-16 DO YOU USE OR REFER TO OVER DAMPING
 528 11-17 DO YOU USE OR REFER TO OVER DAMPING
 529 11-18 DO YOU WORK WITH OSCILLATORS WHICH USE LC TANK
 530 11-19 DO YOU WORK WITH OSCILLATORS WHICH USE MC NETWORKS AS
 531 11-20 DO YOU WORK WITH OSCILLATORS WHICH USE CRYSTALS AS
 532 11-21 DO YOU WORK WITH OSCILLATORS WHICH USE DON'T REMEMBER
 533 11-22 DO YOU WORK WITH SERIES HARTLEY SINUSOIDAL
 534 11-23 DO YOU WORK WITH SHUNT HARTLEY SINUSOIDAL OSCILLATORS
 535 11-24 DO YOU WORK WITH COLPIT'S SINUSOIDAL OSCILLATORS
 536 11-25 DO YOU WORK WITH CLAPP SINUSOIDAL OSCILLATORS
 537 11-26 DO YOU WORK WITH BUTLER SINUSOIDAL OSCILLATORS
 538 11-27 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF
 539 11-28 DO YOU WORK WITH MULTIVIBRATORS IN YOUR PRESENT JOB
 540 11-29 DO YOU INSPECT WAVE GENERATING OR SHAPING CIRCUITS
 541 11-30 DO YOU ALIGN ON ADJUST WAVE GENERATING OR SHAPING
 542 11-31 DO YOU CALIBRATE WAVE GENERATING OR SHAPING CIRCUITS
 543 11-32 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING
 544 11-33 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING
 545 11-34 DO YOU REMOVE OR REPLACE COMPLETE WAVE GENERATING OR
 546 11-35 DO YOU REMOVE OR REPLACE WAVE GENERATING OR SHAPING
 547 11-36 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 548 11-37 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 549 11-38 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 550 11-39 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 551 11-40 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 552 11-41 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 553 11-42 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 554 11-43 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 555 11-44 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 556 11-45 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 557 11-46 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 558 11-47 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 559 11-48 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 560 11-49 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 561 11-50 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 562 11-51 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 563 11-52 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 564 11-53 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 565 11-54 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 566 11-55 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 567 11-56 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 568 11-57 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 569 11-58 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 570 11-59 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 571 11-60 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 572 11-61 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 573 11-62 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 574 11-63 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 575 11-64 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 576 11-65 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 577 11-66 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 578 11-67 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 579 11-68 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 580 11-69 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 581 11-70 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 582 11-71 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 583 11-72 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 584 11-73 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 585 11-74 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 586 11-75 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 587 11-76 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 588 11-77 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 589 11-78 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 590 11-79 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 591 11-80 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 592 11-81 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 593 11-82 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 594 11-83 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 595 11-84 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 596 11-85 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 597 11-86 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 598 11-87 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 599 11-88 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 600 11-89 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 601 11-90 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 602 11-91 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 603 11-92 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 604 11-93 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 605 11-94 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 606 11-95 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 607 11-96 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 608 11-97 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 609 11-98 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 610 11-99 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK
 611 12-00 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK

MULTIVIBRATORS

PCY HARS RESPONDING -YES- OT SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

67-158

SPC SPC
001 002 003

1 549 11-10 DO YOU WORK WITH MULTIPLICATORS WHICH CONTAIN RC
METHODS
1 549 11-11 DO YOU WORK WITH MULTIPLICATORS WHICH CONTAIN
CRYSTALS
1 551 11-12 DO YOU WORK WITH MULTIPLICATORS WHICH CONTAIN DON'T
REMEMBER WHICH TYPE OF POC
1 551 11-13 DO YOU WORK WITH STABLE MULTIPLICATORS
1 552 11-14 DO YOU WORK WITH UNSTABLE MULTIPLICATORS
1 553 11-15 DO YOU WORK WITH BISTABLE MULTIPLICATORS
1 554 11-16 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE
MULTIPLICATORS

1 555 12-01 DO YOU WORK WITH LIMITERS OR CLAMPERS IN YOUR
PRESENT JOB
1 556 12-02 DO YOU WORK WITH SERIES DIODE LIMITERS
1 557 12-03 DO YOU WORK WITH SHUNT DIODE LIMITERS
1 558 12-04 DO YOU WORK WITH LIMITERS WITH BIAS
1 559 12-05 DO YOU WORK WITH ZENER DIODE LIMITERS
1 560 12-06 DO YOU WORK WITH TRANSISTOR LIMITERS
1 561 12-07 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF LIMITERS
1 562 12-08 DO YOU WORK WITH BASIC DIODE CLAMPING CIRCUITS
1 563 12-09 DO YOU WORK WITH SHUNT DIODE CLAMPING CIRCUITS WITH BIAS
1 564 12-10 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF CLAMPING
CIRCUIT

LIMITERS AND CLAMPERS

1 565 13-01 IN YOUR PRESENT JOB, DO YOU WORK ON EQUIPMENT WHICH
CONTAINS ELECTRON TUBES
1 566 13-02 DO YOU CHECK ELECTRON TUBES TO SEE IF THEY ARE GOOD
1 567 13-03 DO YOU USE TUBE TESTERS TO CHECK ELECTRON TUBES
1 568 13-04 DO YOU USE MULTIMETERS TO CHECK ELECTRON TUBES
1 569 13-05 DO YOU USE SCOPES TO CHECK ELECTRON TUBES
1 570 13-06 DO YOU USE SUBSTITUTION TO CHECK ELECTRON TUBES
1 571 13-07 DO YOU USE OR REFER TO CUTOFF
1 572 13-08 DO YOU USE OR REFER TO PEAK INVERSE VOLTAGE RATING
1 573 13-09 DO YOU USE OR REFER TO PEAK CURRENT RATING
1 574 13-10 DO YOU USE OR REFER TO TRANSIT TIME
1 575 13-11 DO YOU USE OR REFER TO PLATE DISSIPATION RATING
1 576 13-12 DO YOU USE OR REFER TO SATURATION
1 577 13-13 DO YOU USE OR REFER TO DC PLATE RESISTANCE
1 578 13-14 DO YOU COMPUTE ACTUAL VALUES OF THE DC PLATE
RESISTANCE FOR ELECTRON TUBES
1 579 13-15 DO YOU USE OR REFER TO PLATE VOLTAGE
1 580 13-16 DO YOU USE OR REFER TO PLATE CURRENT
1 581 13-17 DO YOU USE OR REFER TO GRID VOLTAGE
1 582 13-18 DO YOU USE OR REFER TO GRID CURRENT
1 583 13-19 DO YOU USE OR REFER TO CATHODE VOLTAGE
1 584 13-20 DO YOU USE OR REFER TO CATHODE CURRENT
1 585 13-21 DO YOU USE OR REFER TO THE TRIODE AMPLIFICATION
FACTOR (THE AMPLIFICATION FACTOR FOR TRIODES IS DEFINED AS
THE RATIO OF CHANGE IN PLATE VOLTAGE TO A CHANGE IN GRID
VOLTAGE)

ELECTRON TUBES

1 586 13-22 DO YOU USE OR REFER TO THE TRIODE AMPLIFICATION
FACTOR (THE AMPLIFICATION FACTOR FOR TRIODES IS DEFINED AS
THE RATIO OF CHANGE IN PLATE VOLTAGE TO A CHANGE IN GRID
VOLTAGE)

PER MARS RESPONDING YES BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

0Y-TSR

SPC SPC SPC
001 002 003

J 011 J1-03 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS
J 012 J1-04 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS
J 013 J1-05 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED
AMPLIFIERS
J 014 J1-06 DO YOU TROUBLESHOOT OR REPAIR CASCADED-CONNECTED
AMPLIFIERS
J 015 J1-07 DO YOU TROUBLESHOOT OR REPAIR DON'T KNOW WHICH TYPE
OF AMPLIFIER

J 016 J2-01 DO YOU WORK WITH GAS TUBES (NOT CATHODE OR COLD
CATHODE)

J 017 J2-02 DO YOU WORK WITH CATHODE-RAY TUBES
J 018 J2-03 DO YOU USE OR REFER TO THE CHARACTERISTICS OF BEAM
POWER TUBES

J 019 J2-04 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH BEAM
POWER TUBES ARE USED

J 020 J2-05 DO YOU USE OR REFER TO THE CHARACTERISTICS OF
THERMIONS

J 021 J2-06 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH
THERMIONS ARE USED

J 022 J2-07 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF
ELECTRON GUNS OF CATHODE-RAY TUBES (CRT)

J 023 J2-08 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF
ELECTROMAGNETIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES
(CRT)

J 024 J2-09 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF
ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES
(CRT)

J 025 J2-10 DO YOU USE OR REFER TO PHOSPHOR SCREENS

J 026 J2-11 DO YOU USE OR REFER TO A-V-DAG COATINGS

J 027 J2-12 DO YOU USE OR REFER TO ELECTRON OPTICS

J 028 J2-13 DO YOU USE OR REFER TO PERSISTENCE

J 029 J2-14 DO YOU USE OR REFER TO O.C.V. TIMES

J 030 J2-15 DO YOU USE OR REFER TO FLUORESCENCE

J 031 J2-16 DO YOU USE OR REFER TO PHOSPHORESCENCE

J 032 J3-01 DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR
PRESENT JOB

J 033 J3-02 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS

J 034 J3-03 DO YOU PERFORM TASKS ON FREQUENCY MIXERS

J 035 J3-04 DO YOU USE OR REFER TO THE HETERODYNING OF SIGNALS
IN YOUR WORK WITH TRANSMIT OR RECEIVE SYSTEMS

J 036 J3-05 DO YOU PERFORM TASKS ON REACTANCE MODULATORS

J 037 J3-06 DO YOU PERFORM TASKS ON MODULATED OSCILLATORS

J 038 J3-07 DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR
PRESENT JOB

J 039 J1-02 DO YOU INSPECT AN TRANSMIT OR RECEIVE SYSTEMS

J 040 J1-03 DO YOU CLEAN AN TRANSMIT OR RECEIVE SYSTEMS

J 041 J1-04 DO YOU ALIGN OR ADJUST AN TRANSMIT OR RECEIVE SYSTEMS

SPECIAL PURPOSE ELECTRON TUBES

HETERODYNING, MODULATION AND
DEMODULATION

AM SYSTEMS

PCI 445 RESPONDING YES BY SELECTED GRPS

TASK GROUP SUMMARY
PLANNING MEMBERS PERFORMING

DT-TSA

SPC SPC SPC
UOI UOI UOI

662 KI-05 DO YOU TROUBLESHOOT TO A TRANSMIT ON RECEIVE SYSTEMS
663 KI-06 DO YOU TROUBLESHOOT TO A TRANSMIT ON RECEIVE
COMPONENTS
664 KI-07 DO YOU REMOVE OR REPLACE AM TRANSMIT ON RECEIVE
SYSTEMS
665 KI-08 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE
COMPONENTS
666 KI-09 DO YOU PERFORM TASKS ON RF OSCILLATIONS
667 KI-10 DO YOU PERFORM TASKS ON RF AMPLIFIERS
668 KI-11 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS
669 KI-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS
670 KI-13 DO YOU PERFORM TASKS ON LOCAL OSCILLATORS
671 KI-14 DO YOU PERFORM TASKS ON IF AMPLIFIERS
672 KI-15 DO YOU PERFORM TASKS ON DETECTORS
673 KI-16 DO YOU PERFORM TASKS ON MEMORY MEMORABLE WHICH AM STAGE
674 KI-17 DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN
TRANSMITTERS
675 KI-18 DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN
TRANSMITTERS
676 KI-19 DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS
677 KI-20 DO YOU USE OR REFER TO SELECTIVITY OF RECEIVERS
678 KI-21 DO YOU USE OR REFER TO 2-D HARMONIC DISTORTION
679 KI-22 DO YOU USE OR REFER TO BANDPASS DISTORTION
680 KI-23 DO YOU USE OR REFER TO SQUARE LAW DISTORTION
681 KI-24 DO YOU USE OR REFER TO CO-CHANNEL INTERFERENCE
682 KI-25 DO YOU USE OR REFER TO IMAGE FREQUENCIES IN RECEIVERS
683 KI-26 DO YOU USE OR REFER TO SIGNAL TO IMAGE RATIOS OR
1-AGE REJECTION RATIOS
684 KI-27 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM
TRANSMITTER SCHEMATIC DIAGRAMS
685 KI-28 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM
RECEIVER SCHEMATIC DIAGRAMS
686 KI-29 DO YOU WORK WITH FM TRANSMIT ON RECEIVE SYSTEMS IN
YOUR PRESENT JOB
687 KI-30 DO YOU INSPECT FM TRANSMIT OR RECEIVE SYSTEMS
688 KI-31 DO YOU CLEAN FM TRANSMIT OR RECEIVE SYSTEMS
689 KI-32 DO YOU ALIGN FM TRANSMIT OR RECEIVE SYSTEMS
690 KI-33 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE
SYSTEMS
691 KI-34 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE
COMPONENTS
692 KI-35 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE
SYSTEMS
693 KI-36 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE
COMPONENTS
694 KI-37 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS
695 KI-38 DO YOU PERFORM TASKS ON FREQUENCY MULTIPLIERS

FM SYSTEMS

PCT TASKS RESPONDING 'YES' BY SELECTED GROUPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

0Y-15X

SPC SPC SPC
001 002 003

676	22-11	00	YOU PERFORM TASKS ON DRIVERS (INTERMEDIATE AMPLIFIERS)	29	28	30
677	22-12	00	YOU PERFORM TASKS ON POWER AMPLIFIERS	29	28	30
678	22-13	00	YOU PERFORM TASKS ON IF AMPLIFIERS	28	27	30
679	22-14	00	YOU PERFORM TASKS ON FREQUENCY CONVERTERS	28	27	30
680	22-15	00	YOU PERFORM TASKS ON IF AMPLIFIERS	29	28	30
681	22-16	00	YOU PERFORM TASKS ON LIMITERS	29	28	30
682	22-17	00	YOU PERFORM TASKS ON FREQUENCY DISCRIMINATORS	28	27	30
683	22-18	00	YOU TRACE SIGNALS ON CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSMITTERS	25	30	17
684	22-19	00	YOU TRACE SIGNALS ON CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM RECEIVERS	29	30	27
685	23-01	00	YOU CONVERT DECIMAL (BASE 10) NUMBERS TO OCTAL (BASE 8) NUMBERS	10	11	7
686	23-02	00	YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2) NUMBERS	44	44	45
687	23-03	00	YOU CONVERT OCTAL NUMBERS TO DECIMAL NUMBERS	9	11	5
688	23-04	00	YOU CONVERT OCTAL NUMBERS TO BINARY NUMBERS	10	13	5
689	23-05	00	YOU CONVERT BINARY NUMBERS TO DECIMAL NUMBERS	44	51	38
690	23-06	00	YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS	10	13	5
691	23-07	00	YOU ADD BINARY NUMBERS TO GET A SUM	41	44	35
692	23-08	00	YOU SUBTRACT BINARY NUMBERS USING THE END-AROUND-CARRY METHOD	30	34	22
693	23-09	00	YOU SUBTRACT BINARY NUMBERS USING THE DIRECT SUBTRACTION METHOD	31	34	25
694	23-10	00	YOU ADD OCTAL NUMBERS TO GET A SUM	8	10	5
695	1-01	00	IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO LOGIC FUNCTIONS	54	62	40
696	1-02	00	YOU CONSTRUCT TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES	27	34	15
697	1-03	00	YOU CONSTRUCT TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES	27	34	15
698	1-04	00	YOU CONSTRUCT TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS	24	32	10
699	1-05	00	YOU CONSTRUCT TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS OR GATES	24	32	15
700	1-06	00	YOU USE OR REFER TO TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES	47	51	27
701	1-07	00	YOU USE OR REFER TO TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES	42	51	27
702	1-08	00	YOU USE OR REFER TO TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS	42	51	27
703	1-09	00	YOU USE OR REFER TO TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS	42	51	27
704	1-10	00	YOU USE OR REFER TO LOGIC SYMBOLS FOR AND GATES	50	59	35
705	1-11	00	YOU USE OR REFER TO LOGIC SYMBOLS FOR OR GATES	50	59	35
706	1-12	00	YOU USE OR REFER TO LOGIC SYMBOLS FOR NAND OR NOR GATES	50	59	35

NUMBERING SYSTEMS

LOGIC FUNCTIONS

PCT HARS RESPONDING YES BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMINGSPC SPC SPC
001 002 003

01-75*

50 58 35

L 707 L1-13 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR EXCLUSIVE

38 48 20

L 708 L2-01 IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS
RELATING TO BOOLEAN EQUATIONS, LOGIC DIAGRAMS, OR LOGIC

14 17 10

CIRCUITS

6 7 5

L 709 L2-02 DO YOU DRAW LOGIC SYMBOLS FOR DIRECT COUPLED

13 14 10

TRANSMISSION LOGIC LOGIC CIRCUITS

38 46 22

L 710 L2-03 DO YOU CONSTRUCT TRUTH TABLES FOR CURRENT MODE LOGIC

17 21 10

ICML CIRCUITS

14 20 10

L 711 L2-04 DO YOU DRAW LOGIC DIAGRAMS FROM GIVEN BOOLEAN

24 31 17

EQUATIONS

10 10 10

L 712 L2-05 DO YOU MEASURE INPUTS OR OUTPUTS OF LOGIC GATES

34 42 20

L 713 L2-06 DO YOU DEVELOP OR ANALYZE BOOLEAN EQUATIONS IN THE

13 17 5

PROCESS OF THROU-THROUING INITIAL CIRCUITS

24 25 15

L 714 L2-07 DO YOU ANALYZE LOGIC CIRCUITS BY USING BOOLEAN

41 46 30

ALGEBRA

42 49 30

L 715 L2-08 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR DIRECT

41 48 30

COUPLED TRANSMISSION LOGIC (ICML) CIRCUIT GATES

42 49 30

L 716 L2-09 DO YOU USE OR REFER TO TRUTH TABLES FOR CURRENT MODE

41 48 30

LOGIC (ICML) CIRCUITS

42 49 30

L 717 L2-10 DO YOU USE OR REFER TO LOGIC DIAGRAMS CONSISTING OF

41 48 30

MORE THAN ONE GATE

42 49 30

L 718 L2-11 DO YOU COMPUTE SUM AND CARRY EXPRESSIONS FOR SERIAL

42 49 30

HALF OR FULL ADDER LOGIC DIAGRAMS

41 48 30

L 719 L2-12 DO YOU TRACE DATA FLOW THROUGH PARALLEL FULL ADDER

42 49 30

LOGIC DIAGRAMS

41 48 30

L 720 L2-13 DO YOU WORK WITH ASTABLE (FREE RUNNING)

42 49 30

MULTIVIBRATORS

41 48 30

L 721 L2-14 DO YOU WORK WITH BISTABLE (FLIP-FLOP) MULTIVIBRATORS

42 49 30

L 722 L2-15 DO YOU WORK WITH MONOSTABLE (ONE-SHOT)

41 48 30

MULTIVIBRATORS

42 49 30

L 723 L2-16 DO YOU USE OR REFER TO FLIP-FLOP MULTIVIBRATOR

41 48 30

SYMBOLS

42 49 30

L 724 L2-17 DO YOU USE OR REFER TO SINGLE-SHOT MULTIVIBRATOR

41 48 30

SYMBOLS

42 49 30

L 725 L2-18 DO YOU USE OR REFER TO FLIP-FLOP CIRCUIT DIAGRAMS

32 38 20

L 726 L2-19 DO YOU USE OR REFER TO FLIP-FLOP TRUTH TABLES

35 39 27

L 727 L2-20 DO YOU USE OR REFER TO COMPLEMENTED FLIP-FLOP

34 38 27

LOGIC SYMBOLS

35 41 25

L 728 L2-21 DO YOU USE OR REFER TO COMPLEMENTING FLIP-FLOP LOGIC

33 35 30

SYMBOLS

13 13 13

L 729 L2-22 DO YOU MEASURE OUTPUT WAVESHAPES OF LOGIC CIRCUITS

35 41 25

L 730 L2-23 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTED FLIP-FLOP

33 35 30

SCHEMATIC DIAGRAMS

33 35 30

L 731 L2-24 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTING FLIP-

13 13 13

FLOP SCHEMATIC DIAGRAMS

13 13 13

L 732 L2-25 DO YOU CONSTRUCT TRUTH TABLES FOR J-K FLIP-FLOP

13 13 13

LOGIC SYMBOLS

13 13 13

BOOLEAN EQUATIONS

PC1 MARS RESPONDING TESTS BY SELECTED GRPS
TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DT-15A

		SPC 001		SPC 002		SPC 003			
733 13-01 00 YOU MORE WITH DIGITAL COUNTERS IN YOUR PRESENT JOB		49	58	32	32				
734 13-02 00 YOU USE OR REFER TO UP-COUNTERS		42	51	27	27				
735 13-03 00 YOU USE OR REFER TO DOWN-COUNTERS		32	37	25	25				
736 13-04 00 YOU USE OR REFER TO SERIAL COUNTERS		33	39	22	22				
737 13-05 00 YOU USE OR REFER TO PARALLEL COUNTERS		29	32	22	22				
738 13-06 00 YOU USE OR REFER TO RING COUNTERS		15	13	20	20				
739 13-07 00 YOU USE OR REFER TO DECADE COUNTERS		28	30	25	25				
740 13-08 00 YOU USE OR REFER TO COUNT OBJECT CIRCUITS		29	31	25	25				
741 13-09 00 YOU USE OR REFER TO DOWN CLOCKS		24	28	22	22				
742 13-10 00 YOU USE OR REFER TO UP CLOCKS		26	28	22	22				
743 13-11 00 YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF		34	44	22	22				
UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS									
744 13-12 00 YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF		30	35	20	20				
SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-FLOPS									
745 13-13 00 YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF		25	27	22	22				
DECADE COUNTERS									
746 13-14 00 YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF		13	10	17	17				
RING COUNTERS									
747 13-15 00 YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF		23	24	20	20				
SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER									
748 13-16 00 YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF		20	20	20	20				
SHIFT REGISTERS									
749 13-17 00 YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF		30	32	25	25				
OTHER TYPE OF COUNTERS									
750 13-18 00 YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT		25	32	13	13				
PULSES FOR UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS									
751 13-19 00 YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT		20	23	15	15				
PULSES FOR SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-FLOPS									
752 13-20 00 YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT		14	20	15	15				
PULSES FOR SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER									
753 13-21 00 YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT		22	27	13	13				
PULSES FOR OTHER TYPES OF COUNTERS									
754 13-22 00 YOU CONSTRUCT TRUTH TABLES FROM LOGIC DIAGRAMS OF		4	10	0	0				
DECADE COUNTERS									
755 13-23 00 YOU DETERMINE THE STATE OF EACH FLIP-FLOP IN RING		14	14	13	13				
COUNTERS FOR SPECIFIC INPUT PULSES									
756 13-24 00 YOU DETERMINE THE APPROPRIATE AND GATE NECESSARY		24	25	22	22				
IN COUNT GATE CIRCUITS TO INDICATE A REQUIRED COUNT									
757 13-25 00 YOU MORE WITH SAWTOOTH WAVE GENERATORS		77	83	65	65				
758 13-26 00 YOU MORE WITH TRAPEZOIDAL WAVE GENERATORS		40	70	42	42				
759 13-27 00 YOU MORE WITH PULSED OSCILLATORS WITH REGENERATIVE		40	69	45	45				
FEEDBACK									
760 13-28 00 YOU MORE WITH PULSED OSCILLATORS WITHOUT		52	59	40	40				
REGENERATIVE FEEDBACK									

TIMING CIRCUITS

PER MARS RESPONDING YES BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Dr-TS:

SPC SPC SPC
001 002 003

761 M1-05 00 YOU WORK WITH BLOCKING OSCILLATORS
762 M1-06 00 YOU USE OR REFER TO RISE TIME
763 M1-07 00 YOU USE OR REFER TO FALL OR PLUNGE TIME
764 M1-08 00 YOU USE OR REFER TO SLEEP TIME
765 M1-09 00 YOU USE OR REFER TO ELECTRICAL LENGTH OF SAWTOOTH
WAVEFORMS
766 M1-10 00 YOU USE OR REFER TO PHYSICAL LENGTH OF SAWTOOTH
WAVEFORMS
767 M1-11 00 YOU USE OR REFER TO LINEAR SLOPE OF SAWTOOTH
WAVEFORMS
768 M1-12 00 YOU USE OR REFER TO GATE LENGTH OF SAWTOOTH
WAVEFORMS
769 M2-01 00 YOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB
770 M2-02 00 YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL
GENERATORS
771 M2-03 00 YOU PERFORM PERIODIC MAINTENANCE SUCH AS
ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL
GENERATORS
772 M2-04 00 YOU TROUBLESHOOT TO AN ASSEMBLY OR SUBASSEMBLY
WHILE USING SIGNAL GENERATORS
773 M2-05 00 YOU TROUBLESHOOT TO THE SMALLEST REPLACEABLE
COMPONENT WHILE USING SIGNAL GENERATORS
774 M2-06 00 YOU USE AUDIO SINE-WAVE GENERATORS
775 M2-07 00 YOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH
AS SQUARE WAVE, TRIANGLE, PULSE, OR SPIKE
776 M2-08 00 YOU USE RF GENERATORS LESS THAN 1,000 MHZ
777 M2-09 00 YOU USE RF GENERATORS GREATER THAN 1,000 MHZ
778 M2-10 00 YOU USE OTHER SPECIAL PURPOSE OR MULTI-FUNCTION
GENERATORS
779 M3-01 00 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING
WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS OR
GENERATORS
780 M3-02 00 YOU INSPECT MOTORS
781 M3-03 00 YOU CLEAN OR LUBRICATE MOTORS
782 M3-04 00 YOU OPERATE MOTORS
783 M3-05 00 YOU REMOVE OR REPLACE COMPLETE MOTORS
784 M3-06 00 YOU REMOVE OR REPLACE MOTOR PARTS
785 M3-07 00 YOU TROUBLESHOOT AS FAR AS CHECKING WIRE
CONNECTIONS OF MOTORS
786 M3-08 00 YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS
787 M3-09 00 YOU PERFORM ANY TASKS ON FIELD COILS
788 M3-10 00 YOU PERFORM ANY TASKS ON ARMATURES
789 M3-11 00 YOU PERFORM ANY TASKS ON ROTORS
790 M3-12 00 YOU PERFORM ANY TASKS ON BRUSHES
791 M3-13 00 YOU PERFORM ANY TASKS ON SLIP RINGS
792 M3-14 00 YOU PERFORM ANY TASKS ON COMMUTATORS
793 M3-15 00 YOU PERFORM ANY TASKS ON POLE PIECES

USE OF SIGNAL GENERATORS

MOTORS AND GENERATORS

91 92 90
90 92 88
90 90 90
85 87 80
90 92 88
88 89 85
89 92 85
50 54 45
34 39 25
39 41 38
43 44 38
74 77 72
67 72 57
54 59 45
32 35 27

PLT MANS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

07-154

SPC SPC SPC
001 002 003

M 794 M3-19 00 YOU DETERMINE ON MEASURE THE MAGNITUDE OF THE
 FORCE OR TORQUE CREATED BY A MOTOR
 M 795 M3-17 00 YOU DETERMINE OR MEASURE THE DIRECTION OF THE
 MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR
 M 796 M3-18 00 YOU DETERMINE OR MEASURE THE MAGNITUDE
 OR DIRECTION OF THE INDUCED VOLTAGE IN MOTORS
 M 797 M3-19 00 YOU WORK WITH SYNCHRONOUS MOTORS
 M 798 M3-20 00 YOU WORK WITH INDUCTION MOTORS
 M 799 M3-21 00 YOU WORK WITH SPLIT-PHASE MOTORS
 M 800 M3-22 00 YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS
 M 801 M3-23 00 YOU INSPECT GENERATORS
 M 802 M3-24 00 YOU CLEAN OR LUBRICATE GENERATORS
 M 803 M3-25 00 YOU OPERATE GENERATORS
 M 804 M3-26 00 YOU REMOVE OR REPLACE COMPLETE GENERATORS
 M 805 M3-27 00 YOU REMOVE OR REPLACE GENERATOR PARTS
 M 806 M3-28 00 YOU TROUBLESHOOT AS FAR AS CHECKING WIRE
 CONNECTIONS OF GENERATORS
 M 807 M3-29 00 YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF
 GENERATORS
 M 808 M1-01 00 YOU WORK WITH METERS IN YOUR PRESENT JOB
 M 809 M1-02 00 YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF
 PERMANENT MAGNETS
 M 810 M1-03 00 YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF
 MOVING COILS
 M 811 M1-04 00 YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF
 SPIRAL SPRINGS
 M 812 M1-05 00 YOU READ METER SCALES
 M 813 M1-06 00 YOU EXTEND THE RANGE OF AMMETERS
 M 814 M1-07 00 YOU ZERO OHMMETERS
 M 815 M1-08 00 YOU ZERO AMMETERS
 M 816 M1-09 00 YOU EXTEND THE RANGE OF VOLTMETERS
 M 817 M1-10 00 YOU USE OR REFER TO VOLT METER SENSITIVITY
 (EXPRESSED IN UNITS OF OHMS PER VOLT)
 M 818 M2-01 00 YOU WORK WITH SATURABLE REACTORS OR MAGNETIC
 AMPLIFIERS IN YOUR PRESENT JOB
 M 819 M2-02 00 YOU INSPECT MAGNETIC AMPLIFIERS OR SATURABLE
 REACTORS
 M 820 M2-03 00 YOU CLEAN MAGNETIC AMPLIFIERS OR SATURABLE
 REACTORS
 M 821 M2-04 00 YOU ADJUST MAGNETIC AMPLIFIERS OR SATURABLE
 REACTORS
 M 822 M2-05 00 YOU TROUBLESHOOT MAGNETIC AMPLIFIERS OR SATURABLE
 REACTORS
 M 823 M2-06 00 YOU REMOVE OR REPLACE MAGNETIC AMPLIFIERS OR
 SATURABLE REACTORS
 M 824 M2-07 00 YOU REMOVE OR REPLACE MAGNETIC AMPLIFIER OR
 SATURABLE REACTOR COMPONENTS

METER MOVEMENTS

SATURABLE REACTORS AND MAGNETIC
AMPLIFIERS

PLT WARS RESPONDING YES BY SELECTED GRPS

WPSUM PAGE 30

TASK GROUP SUMMARY
PLANT MEMBERS PERFORMING

SPC SPC SPC
001 007 003

07-154

W 025 W2-06 DO YOU USE OR REFER TO HYSTERESIS CURVES OR LOOPS
W 024 W2-09 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT
WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF
SINGLE WINDING SATURABLE REACTORS
W 027 W2-10 DO YOU MEASURE OUTPUT WAVEFORMS ACROSS REACTOR
WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE
REACTORS
W 028 W2-11 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT
WAVEFORMS FOR MAGNETIC AMPLIFIERS
W 029 W2-12 DO YOU USE OR REFER TO COERCIVE FORCE IN SATURABLE
REACTORS
W 030 W2-13 DO YOU USE OR REFER TO RESIDUAL MAGNETISM IN
SATURABLE REACTORS
W 031 W2-14 DO YOU USE OR REFER TO FLUX DENSITY IN SATURABLE
REACTORS
W 032 W2-15 DO YOU USE OR REFER TO POINT OF SATURATION IN
SATURABLE REACTORS
W 033 W2-16 DO YOU USE OR REFER TO SATURABLE REACTOR SCHEMATIC
SYMBOLS
W 034 W2-01 DO YOU WORK WITH WAVESHAPING CIRCUITS IN YOUR PRESENT
JOB
W 035 W3-02 DO YOU USE OR REFER TO TRANSIENT INTERVALS
W 036 W3-03 DO YOU USE OR REFER TO PULSE WIDTH (PW)
W 037 W3-04 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)
W 038 W3-05 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY
(PRF)
W 039 W3-06 DO YOU USE OR REFER TO DIFFERENTIATING CIRCUITS
W 040 W3-07 DO YOU USE OR REFER TO INTEGRATING CIRCUITS
W 041 W3-08 DO YOU USE OR REFER TO THE CLASSIFICATION OF TIME
CONSTANTS (TC) AS LONG, MEDIUM, OR SHORT
W 042 W3-09 DO YOU DETERMINE WHETHER AN LR OR RC CIRCUIT IS
DIFFERENTIATING OR INTEGRATING BASED ON THE TIME CONSTANT
AND OUTPUT CONFIGURATION
W 043 W3-10 DO YOU WORK WITH SQUARE WAVE GENERATORS
W 044 W3-11 DO YOU WORK WITH RECTANGULAR WAVE GENERATORS
W 045 W3-01 DO YOU WORK ON SINGLE SIDEBAND SYSTEMS IN YOUR
PRESENT JOB
W 046 W3-02 DO YOU INSPECT SSB TRANSMIT OR RECEIVE SYSTEMS
W 047 W3-03 DO YOU CLEAN SSB TRANSMIT OR RECEIVE SYSTEMS
W 048 W3-04 DO YOU ALIGN SSB TRANSMIT OR RECEIVE SYSTEMS
W 049 W3-05 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE
SYSTEMS
W 050 W3-06 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE
COMPONENTS
W 051 W3-07 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE
SYSTEMS
W 052 W3-08 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE
COMPONENTS

WAVESHAPING CIRCUITS

SINGLE SIDEBAND SYSTEMS

PC1 NAME RESPONDING YES BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DT-TSK

SPC SPC SPC
001 002 003

0 651 01-09 00 YOU PERFORM TASKS ON SSB AUDIO AMPLIFIERS	2	1	2
0 654 01-10 00 YOU PERFORM TASKS ON SSB BALANCED MODULATORS	3	1	5
0 655 01-11 00 YOU PERFORM TASKS ON SSB CARRIER OSCILLATORS	3	1	5
0 656 01-12 00 YOU PERFORM TASKS ON SSB LC FILTERS	3	1	5
0 657 01-13 00 YOU PERFORM TASKS ON SSB CRYSTAL FILTERS	3	1	5
0 658 01-14 00 YOU PERFORM TASKS ON SSB MECHANICAL FILTERS	3	1	5
0 659 01-15 00 YOU PERFORM TASKS ON SSB OSCILLATORS	3	1	5
0 660 01-16 00 YOU PERFORM TASKS ON SSB MIXERS	3	1	5
0 661 01-17 00 YOU PERFORM TASKS ON SSB DRIVERS	3	1	5
0 662 01-18 00 YOU PERFORM TASKS ON SSB POWER AMPLIFIERS	3	1	5
0 663 01-19 00 YOU PERFORM TASKS ON SSB RF AMPLIFIERS	3	1	5
0 664 01-20 00 YOU PERFORM TASKS ON SSB FREQUENCY CONVERTERS	3	1	5
0 665 01-21 00 YOU PERFORM TASKS ON SSB IF AMPLIFIERS	3	1	5
0 666 01-22 00 YOU PERFORM TASKS ON SSB DEMODULATORS	3	1	5
0 667 01-23 00 YOU PERFORM TASKS ON SSB DON'T REMEMBER WHICH SSB	1	1	0
SYSTEM STAGES			
0 668 01-24 00 YOU USE OR REFER TO SELECTIVE FADING	1	1	0
0 669 01-25 00 YOU USE OR REFER TO PEAK POWER	3	1	5
0 670 01-26 00 YOU USE OR REFER TO FREQUENCY STABILITY	3	1	5
0 671 01-27 00 YOU USE OR REFER TO RESPONSE CURVES FOR	2	1	2
BANDWIDTH FILTERS			
0 672 01-28 00 YOU CALCULATE PEAK POWER OR EFFECTIVE POWER OF SSB	1	1	0
TRANSMITTERS			
0 673 01-29 00 YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB	3	1	5
0 674 01-30 00 YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB	3	1	5
RECEIVER SCHEMATIC DIAGRAMS			
0 675 02-01 00 YOU WORK ON PULSE MODULATION SYSTEMS IN YOUR	48	52	40
PRESENT JOB			
0 676 02-02 00 YOU INSPECT PULSE MODULATION SYSTEMS	50	54	42
0 677 02-03 00 YOU CLEAN PULSE MODULATION SYSTEMS	49	54	40
0 678 02-04 00 YOU ALIGN PULSE MODULATION SYSTEMS	47	52	38
0 679 02-05 00 YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS	49	54	40
0 680 02-06 00 YOU TROUBLESHOOT TO PULSE MODULATION SYSTEM	47	52	38
COMPONENTS			
0 681 02-07 00 YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS	41	45	35
0 682 02-08 00 YOU REMOVE OR REPLACE PULSE MODULATION SYSTEM	48	54	38
COMPONENTS			
0 683 02-09 00 YOU WORK ON PULSE-AMPLITUDE MODULATION (PAM)	25	28	20
SYSTEMS			
0 684 02-10 00 YOU WORK ON PULSE-DURATION MODULATION (PDM)	24	30	20
SYSTEMS			
0 685 02-11 00 YOU WORK ON PULSE-POSITION MODULATION (PPM)	11	8	15
SYSTEMS			
0 686 02-12 00 YOU WORK ON PULSE-CODE MODULATION (PCM) SYSTEMS	4	3	5
0 687 02-13 00 YOU WORK ON LINE PULSING MODULATION SYSTEMS	8	10	5
0 688 02-14 00 YOU WORK ON DON'T REMEMBER WHICH TYPE OF	16	15	17
MODULATION SYSTEM			

PULSE MODULATION SYSTEMS

PCT NAME RESPONDING 'YES' BY SELECTED GMP5

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DT-15A		SPC SPC	
		001 002 003	
0 007 02-15 00 YOU PERFORM TASKS ON PULSE MODULATION SYSTEM	PGWEN SUPPLIES	44	48 38
0 090 02-16 00 YOU PERFORM TASKS ON PULSE MODULATION SYSTEM	CHARGING CIRCUITS AND CHARGING DIODES	37	44 25
0 091 02-17 00 YOU PERFORM TASKS ON PULSE MODULATION SYSTEM	PULSE FORMING NETWORKS	44	48 38
0 092 02-18 00 YOU PERFORM TASKS ON PULSE MODULATION SYSTEM	TIMERS	34	42 20
0 093 02-19 00 YOU PERFORM TASKS ON PULSE MODULATION SYSTEM	SWITCHES SUCH AS GAS THERMOSTATS	41	46 32
0 094 02-20 00 YOU PERFORM TASKS ON PULSE MODULATION SYSTEM	PULSE TRANSFORMERS	43	48 35
0 095 02-21 00 YOU PERFORM TASKS ON PULSE MODULATION SYSTEM	TRANSMITTER TUNES	43	48 35
0 096 02-22 00 YOU PERFORM TASKS ON PULSE MODULATION SYSTEM	AMPLIFIERS	44	49 35
0 097 02-23 00 YOU PERFORM TASKS ON PULSE MODULATION SYSTEM	FREQUENCY CONVERTERS	34	38 27
0 098 02-24 00 YOU PERFORM TASKS ON PULSE MODULATION SYSTEM	IF AMPLIFIERS	44	49 35
0 099 02-25 00 YOU PERFORM TASKS ON PULSE MODULATION SYSTEM	DETECTORS	44	48 38
0 900 02-26 00 YOU PERFORM TASKS ON PULSE MODULATION SYSTEM	VIDEO AMPLIFIERS	45	49 38
0 901 02-27 00 YOU PERFORM TASKS ON PULSE MODULATION SYSTEM	POWER VIDEO AMPLIFIERS	29	31 25
0 902 02-28 00 YOU PERFORM TASKS ON PULSE MODULATION SYSTEM	DON'T REMEMBER WHICH PULSE MODULATION SYSTEM STAGES	5	3 10
0 903 02-29 00 YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)		46	51 38
0 904 02-30 00 YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)		41	45 35
0 905 02-31 00 YOU USE OR REFER TO PULSE WIDTH (PW)		45	51 35
0 906 02-32 00 YOU USE OR REFER TO PULSE SHAPE		43	49 32
0 907 02-33 00 YOU USE OR REFER TO PULSE POWER		41	44 32
0 908 02-34 00 YOU USE OR REFER TO AVERAGE POWER		44	51 32
0 909 02-35 00 YOU CALCULATE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)		25	31 15
0 910 02-36 00 YOU MEASURE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)		34	42 30
0 911 02-37 00 YOU USE FORMULAS TO CALCULATE AVERAGE POWER OR PULSE POWER OF PULSE MODULATION TRANSMIT SYSTEMS		21	25 13
0 912 02-38 00 YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION TRANSMITTER SCHEMATIC DIAGRAMS		41	46 32
0 913 02-39 00 YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION RECEIVER SCHEMATIC DIAGRAMS		44	52 30
0 914 03-01 00 YOU WORK WITH ANTENNAS IN YOUR PRESENT JOB		70	79 55
0 915 03-02 00 YOU INSPECT ANTENNAS		68	76 55

ANTENNAS

PC1 HARS RESPONDING YES BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

01-754

SPC	SPC	SPC
001	002	003
49	77	55
48	77	50
57	42	47
49	70	52
42	70	47
46	51	38
59	46	47
17	21	10
17	21	10
15	20	7
14	17	7
12	15	5
14	17	7
8	10	5
3	4	0
4	3	5
4	4	7
13	17	5
8	11	2
17	23	7
9	11	2
12	15	5
11	14	5
19	21	15
17	17	17
6	10	0
5	4	5

0 914 03-03 00 YOU CLEAN ANTENNAS

0 917 03-04 00 YOU PHYSICALLY ALIGN ANTENNAS

0 918 03-05 00 YOU ELECTRICALLY ALIGN ANTENNAS

0 919 03-06 00 YOU TROUBLESHOOT TO ANTENNAS

0 920 03-07 00 YOU TROUBLESHOOT TO ANTENNA COMPONENTS

0 921 03-08 00 YOU REMOVE OR INSTALL ANTENNAS

0 922 03-09 00 YOU REMOVE OR REPLACE COMPONENTS OF ANTENNAS

0 923 03-10 00 YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF E OR ELECTRIC FIELD LINES

0 924 03-11 00 YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF H OR MAGNETIC FIELD LINES

0 925 03-12 00 YOU DETERMINE THE DIRECTION OF THE MAGNETIC LINES IN RELATION TO THE ELECTRIC LINES OF FORCE FOR ANTENNAS

0 926 03-13 00 YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE OF CORRECT LENGTH (HALF-WAVE) ACT AS INDUCTIVE LOADS TO THE GENERATOR

0 927 03-14 00 YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE LONGER THAN A HALF-WAVE ACT AS INDUCTIVE LOADS TO THE GENERATOR

0 928 03-15 00 YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE SHORTER THAN A HALF-WAVE ACT AS CAPACITIVE LOADS TO THE GENERATOR

0 929 03-16 00 YOU WORK WITH HERTZ ANTENNAS

0 930 03-17 00 YOU WORK WITH MARCONI ANTENNAS

0 931 03-18 00 YOU WORK WITH BROADSIDE ARRAYS

0 932 03-19 00 YOU WORK WITH END-FIRE ARRAYS

0 933 03-20 00 YOU WORK WITH CARBOL, ARRAYS

0 934 03-21 00 YOU WORK WITH COLLINER ARRAYS

0 935 03-22 00 YOU USE OR REFER TO THE TERM ELECTROMAGNETIC INDUCTION FIELDS WHEN WORKING WITH ANTENNAS

0 936 03-23 00 YOU MEASURE ELECTROMAGNETIC INDUCTION FIELDS OF ANTENNAS

0 937 03-24 00 YOU USE OR REFER TO THE TERM ELECTROMAGNETIC RADIATION FIELDS WHEN WORKING WITH ANTENNAS

0 938 03-25 00 YOU MEASURE ELECTROMAGNETIC RADIATION FIELDS OF ANTENNAS

0 939 03-26 00 YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA RADIATION

0 940 03-27 00 YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA INDUCTION FIELD

0 941 03-28 00 ARE ANY OF THE ANTENNAS YOU WORK ON LINEARLY POLARIZED

0 942 03-29 00 ARE ANY OF THE ANTENNAS YOU WORK ON CIRCULARLY POLARIZED

0 943 03-30 00 YOU MEASURE OR DETERMINE THE POLARITY OF ANTENNAS YOU WORK ON

0 944 03-31 00 YOU CONSTRUCT, OR MAKE THE CALCULATIONS NECESSARY TO CONSTRUCT, ANTENNAS OF CORRECT LENGTH FOR SPECIFIC WAVELENGTHS

PC1 HAS RESPONDING 'YES' BY SELECTED GPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMINGSPC SPC SPC
001 002 003

01-15R

C 443 03-32 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS
 C 444 03-33 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS DIRECTORS
 C 447 03-34 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS REFLECTORS
 C 448 03-35 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN DON'T REMEMBER WHAT KIND OF ELEMENTS
 C 449 03-36 DO YOU WORK ON UNIDIRECTIONAL ANTENNAS
 C 450 03-37 DO YOU WORK ON BIDIRECTIONAL ANTENNAS
 C 451 03-38 DO YOU WORK ON DON'T REMEMBER THE DIRECTIONALITY
 C 452 03-39 DO YOU WORK WITH ROTARY ANTENNA ARRAYS
 C 453 01-01 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)
 P 454 01-02 DO YOU REFER TO OR USE COPPER LOSS OR IZR LOSS IN TRANSMISSION LINES
 P 455 01-03 DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY CURRENTS IN TRANSMISSION LINES
 P 456 01-04 DO YOU REFER TO OR USE RADIATION LOSS IN TRANSMISSION LINES
 P 457 01-05 DO YOU USE OR REFER TO DIELECTRIC LOSS IN TRANSMISSION LINES
 P 458 01-06 DO YOU USE OR REFER TO LEAKAGE LOSSES IN TRANSMISSION LINES
 P 459 01-07 DO YOU WORK WITH TWISTED PAIR TRANSMISSION LINES
 P 460 01-08 DO YOU WORK WITH TRIN LEAD TRANSMISSION LINES
 P 461 01-09 DO YOU WORK WITH OPEN TWO-WIRE TRANSMISSION LINES
 P 462 01-10 DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION LINES
 P 463 01-11 DO YOU WORK WITH RIGID COAXIAL CABLE TRANSMISSION LINES
 P 464 01-12 DO YOU TROUBLESHOOT TRANSMISSION LINES
 P 465 01-13 DO YOU ANALYZE VOLTAGE OR CURRENT WAVEFORMS IN TRANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION (OPEN, SHORTED, CAPACITIVE, INDUCTIVE)
 P 466 01-14 DO YOU SELECT APPROPRIATE TRANSMISSION LINES TERMINATIONS TO ACHIEVE DESIRED WAVEFORMS
 P 467 01-15 DO YOU USE OR REFER TO SCHEMATIC SYMBOLS FOR LINE TERMINATIONS IN TERMS OF CIRCUIT TERMINATIONS
 P 468 01-16 DO YOU MEASURE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES
 P 469 01-17 DO YOU CALCULATE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES
 P 470 01-18 DO YOU PERFORM THE CALCULATIONS NECESSARY TO DETERMINE THE IMPEDANCE AND LENGTH OF QUARTER - WAVELENGTH MATCHING TRANSFORMERS TO MATCH TRANSMISSION LINES TO LOADS

TRANSMISSION LINES

PC1 HARS RESPONDING TEST AT SELECTED SRPS

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TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

DT-VSK

SPC SPC SPC
001 002 003

P 971 P1-19 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING MATCHING TRANSFORMERS

P 972 P1-20 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING DELTA MATCHING

P 973 P1-21 DO YOU SELECT THE TYPE OF TRANSMISSION LINE NEEDED FOR PARTICULAR JOBS WITHOUT REFERRING TO TECHNICAL DATA

P 974 P1-22 DO YOU USE OR REFER TO THE TERM CHARACTERISTIC IMPEDANCE (Z0) OF TRANSMISSION LINES

P 975 P1-23 DO YOU CALCULATE THE CHARACTERISTIC IMPEDANCE (Z0) OF TRANSMISSION LINES

P 976 P1-24 DO YOU USE OR REFER TO THE TERM CUTOFF FREQUENCY OF TRANSMISSION LINES

P 977 P1-25 DO YOU USE OR REFER TO THE TERM VELOCITY FACTOR (K) OF TRANSMISSION LINES

P 978 P1-26 DO YOU COMPUTE THE ELECTRICAL LENGTH OF TRANSMISSION LINES FOR PARTICULAR FREQUENCIES

P 979 P1-27 DO YOU CONSTRUCT TRANSMISSION LINES OF PARTICULAR ELECTRICAL LENGTH FOR GIVEN FREQUENCIES

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

P 981 P1-29 DO YOU WORK WITH NONRESONANT (PLATE) TRANSMISSION LINES

P 982 P1-30 DO YOU WORK WITH RESONANT TRANSMISSION LINES

P 983 P1-31 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING STUB MATCHING

P 984 P2-01 DO YOU WORK WITH WAVEGUIDES OR CAVITY RESONATORS IN YOUR PRESENT JOB

P 985 P2-02 DO YOU INSPECT WAVEGUIDES OR CAVITY RESONATORS

P 986 P2-03 DO YOU CLEAN WAVEGUIDES OR CAVITY RESONATORS

P 987 P2-04 DO YOU BEND WAVEGUIDES OR CAVITY RESONATORS

P 988 P2-05 DO YOU TWIST WAVEGUIDES OR CAVITY RESONATORS

P 989 P2-06 DO YOU PRESSURIZE WAVEGUIDES OR CAVITY RESONATORS

P 990 P2-07 DO YOU PURGE WAVEGUIDES OR CAVITY RESONATORS

P 991 P2-08 DO YOU TROUBLESHOOT WAVEGUIDES OR CAVITY RESONATORS

P 992 P2-09 DO YOU REMOVE OR INSTALL COMPLETE WAVEGUIDES

P 993 P2-10 DO YOU REMOVE OR INSTALL WAVEGUIDE SECTIONS

P 994 P2-11 DO YOU REMOVE OR INSTALL GUNNY LOADS

P 995 P2-12 DO YOU REMOVE OR INSTALL 90 DEGREE BENDS

P 996 P2-13 DO YOU REMOVE OR INSTALL 45 DEGREE BENDS

P 997 P2-14 DO YOU REMOVE OR INSTALL OTHER JOINTS

P 998 P2-15 DO YOU REMOVE OR INSTALL CHOKE JOINTS

P 999 P2-16 DO YOU REMOVE OR INSTALL ROTATING JOINTS

P 1000 P2-17 DO YOU REMOVE OR INSTALL DIRECTIONAL COUPLERS

P 1001 P2-18 DO YOU REMOVE OR INSTALL BIDIRECTIONAL COUPLERS

P 1002 P2-19 DO YOU USE OR REFER TO "A" RAIL OF WAVEGUIDES

WAVEGUIDES AND CAVITY RESONATORS

PLT MAPS RESPONDING 'TLS' AT SELECTED GRPS

GPSUMI PAGE 36

TASK GROUP SUMMARY
PLANT MEMBERS PERFORMING

07-15x

	SPC 001	SPC J02	SPC J03
PL103 PL2-40 DO YOU USE OR REFER TO THE WALL OF WAVEGUIDES	12	15	5
PL104 PL2-27 DO YOU USE OR REFER TO CUTOFF FREQUENCY OF WAVEGUIDES	15	18	10
PL105 PL2-22 DO YOU USE OR REFER TO FREQUENCY-DETERMINING WALL OF WAVEGUIDES	7	10	2
PL106 PL2-23 DO YOU USE OR REFER TO POWER-DETERMINING WALL OF WAVEGUIDES	10	13	5
PL107 PL2-24 DO YOU USE OR REFER TO ELECTRIC FILL BOUNDARY CONDITIONS	6	8	2
PL108 PL2-25 DO YOU USE OR REFER TO MAGNETIC FILL BOUNDARY CONDITIONS	6	8	2
PL109 PL2-26 DO YOU USE OR REFER TO DIELECTRIC FILL BOUNDARY CONDITIONS	13	17	5
PL110 PL2-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST WAVEGUIDES ARE MADE WITH A "B" WALL SIZE OF .7 WAVELENGTHS OF THE OPERATING FREQUENCY	8	11	2
PL111 PL2-24 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST "A" WALLS RANGE FROM .2 TO .5 WAVELENGTHS IN SIZE, WITH .35 USED AS AN AVERAGE	8	11	2
PL112 PL2-28 ARE YOU CONCERNED WITH THE MATERIAL (SUCH AS BRASS) WHICH WAVEGUIDES ARE MADE OF	9	10	7
PL113 PL2-30 DO YOU COMPUTE THE LENGTH OF A WAVEGUIDE FOR SPECIFIC INSTALLATION	3	4	0
PL114 PL2-31 DO YOU USE THE RIGHT HAND RULE TO DETERMINE THE DIRECTION OF PROPAGATION, DIRECTION OF "E" FIELD, OR DIRECTION OF "H" FIELD IN WAVEGUIDES	3	4	0
PL115 PL2-32 DO YOU USE OR REFER TO THE TIME PHASE OF PEAK "E" OR "H" LINES IN WAVEGUIDES	1	1	0
PL116 PL2-33 DO YOU MEASURE THE TIME PHASE OF "E" OR "H" LINES IN WAVEGUIDES	2	1	2
PL117 PL2-34 DO YOU USE OR REFER TO THE SPACE QUADRATURE OF "E" OR "H" LINES IN WAVEGUIDES	9	8	7
PL118 PL2-35 ARE HIGH POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	11	15	2
PL119 PL2-36 ARE LOW POWER PROBES USED, ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	25	30	17
PL120 PL2-37 ARE LOOPS USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	20	24	13
PL121 PL2-38 ARE APERTURES (INDOORS OR OUTDOORS) USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	23	30	10
PL122 PL2-39 ARE JOINTS REMEMBER THE KIND OF ENERGY COUPLING USLO ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	2	3	0
PL123 PL2-40 DO YOU DETERMINE WHERE PROBES SHOULD BE MOUNTED IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA	3	4	0
PL124 PL2-41 DO YOU DETERMINE THE POSITIONING OF LOOPS IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA			

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DT-TSK

	SPC 001	SPC 002	SPC 003
P1024 P2-02 00 YOU DETERMINE THE POSITIONING OR SIZE OF APERTURES IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA	2	3	0
P1026 P2-03 00 YOU ARE CHOKE JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	10	13	5
P1027 P2-04 00 YOU ARE NOTATING JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	41	51	22
P1028 P2-05 00 YOU ARE NOT REMEMBER THE KIND OF JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	14	23	5
P1029 P2-06 00 YOU TUNE CAVITY RESONATORS USING CAPACITIVE TUNING	24	35	10
P1030 P2-07 00 YOU TUNE CAVITY RESONATORS USING INDUCTIVE TUNING	20	24	13
P1031 P2-08 00 YOU TUNE CAVITY RESONATORS USING VOLUME TUNING	22	25	15
P1032 P2-09 00 YOU TUNE CAVITY RESONATORS USING DON'T REMEMBER THE METHOD OF TUNING	14	16	5
P1033 P2-10 00 YOU MEASURE THE FREQUENCY OF SIGNALS IN CAVITY RESONATORS	42	54	22
P1034 P2-11 00 YOU PRESENT JOB DO YOU WORK WITH KLYSTRONS, TRAVELING WAVE TUBES (TWT), PARAMETRIC AMPLIFIERS, OR MAGNETRONS	59	75	32
P1035 P3-02 00 YOU USE OR REFER TO INTERELECTRODE CAPACITANCE	32	38	22
P1036 P3-03 00 YOU USE OR REFER TO ELECTRON TRANSIT TIME	24	30	15
P1037 P3-04 00 YOU USE OR REFER TO LEO INDUCTANCE	23	26	13
P1038 P3-05 00 YOU USE OR REFER TO RF LOSSES IN INTERNAL CIRCUITRY	30	36	15
P1039 P3-06 00 YOU USE OR REFER TO PRINCIPLE OF ELECTRON VELOCITY MODULATION	15	23	2
P1040 P3-07 00 YOU USE OR REFER TO ELECTRON BUNCHING	32	39	17
P1041 P3-08 00 YOU WORK WITH TWO-CAVITY KLYSTRONS	11	11	10
P1042 P3-09 00 YOU WORK WITH THREE-CAVITY KLYSTRONS	7	10	2
P1043 P3-10 00 YOU WORK WITH REFLEX KLYSTRONS	57	72	30
P1044 P3-11 00 YOU WORK WITH TRAVELING-WAVE TUBES (TWT) AMPLIFIERS	8	8	7
P1045 P3-12 00 YOU WORK WITH NONDEGENERATIVE PARAMETRIC AMPLIFIERS	5	7	0
P1046 P3-13 00 YOU WORK WITH UP-CONVERTER PARAMETRIC AMPLIFIERS	4	4	0
P1047 P3-14 00 YOU WORK WITH MAGNETRONS	41	76	35
P1048 P3-15 00 YOU INSPECT KLYSTRONS OR TWT	50	62	30
P1049 P3-16 00 YOU CLEAN KLYSTRONS OR TWT	41	49	25
P1050 P3-17 00 YOU TUNE KLYSTRONS OR TWT ELECTRICALLY	43	51	30
P1051 P3-18 00 YOU TUNE KLYSTRONS OR TWT MECHANICALLY	54	64	32
P1052 P3-19 00 YOU PERFORM OPERATIONAL CHECKS OF KLYSTRONS OR TWT	55	48	32
P1053 P3-20 00 YOU TROUBLESHOOT KLYSTRONS OR TWT	45	54	30
P1054 P3-21 00 YOU REMOVE OR REPLACE COMPLETE KLYSTRON OR TWT	59	73	35
P1055 P3-22 00 YOU REMOVE OR REPLACE KLYSTRON OR TWT COMPONENTS	20	25	10
P1056 P3-23 00 YOU INSPECT PARAMETRIC AMPLIFIERS	14	20	5
P1057 P3-24 00 YOU CLEAN PARAMETRIC AMPLIFIERS	14	20	5
P1058 P3-25 00 YOU ADJUST PARAMETRIC AMPLIFIERS	14	20	5

MICROWAVE AMPLIFIERS AND OSCILLATORS

PER MEMS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

01-754

	SPC 001	SPC 002	SPC 003
P1059 P3-26 DO YOU TUNE PARAMETRIC AMPLIFIERS	14	20	5
P1060 P3-27 DO YOU PERFORM OPERATIONAL CHECKS OF PARAMETRIC AMPLIFIERS	14	18	5
P1061 P3-28 DO YOU TROUBLESHOOT PARAMETRIC AMPLIFIERS	13	17	5
P1062 P3-29 DO YOU REMOVE OR REPLACE COMPLETE PARAMETRIC AMPLIFIER	12	15	5
P1063 P3-30 DO YOU REMOVE OR REPLACE PARAMETRIC AMPLIFIER COMPONENTS	13	17	5
P1064 P3-31 DO YOU INSPECT MAGNETRONS	58	72	32
P1065 P3-32 DO YOU CLEAN MAGNETRONS	50	61	32
P1066 P3-33 DO YOU ADJUST MAGNETRONS	51	46	25
P1067 P3-34 DO YOU TUNE MAGNETRONS	50	45	22
P1068 P3-35 DO YOU PERFORM OPERATIONAL CHECKS OF MAGNETRONS	59	73	32
P1069 P3-36 DO YOU TROUBLESHOOT MAGNETRONS	48	58	30
P1070 P3-37 DO YOU REMOVE OR REPLACE COMPLETE MAGNETRON	59	73	32
P1071 P3-38 DO YOU REMOVE OR REPLACE MAGNETRON COMPONENTS	17	23	7
P1072 P3-39 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS COLLECTOR PLATES	10	13	5
P1073 P3-40 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER CAVITIES	5	8	0
P1074 P3-41 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER GRIDS	5	7	0
P1075 P3-42 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS FEEDBACK LOOPS	10	10	10
P1076 P3-43 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS ORIFT SPACES	7	10	2
P1077 P3-44 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER GRIDS	6	10	0
P1078 P3-45 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER CAVITIES	7	8	5
P1079 P3-46 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CONTROL GRIDS	14	17	10
P1080 P3-47 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATHODES	15	18	10
P1081 P3-48 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON REFLECTOR (REFLECTOR) PLATES	44	58	30
P1082 P3-49 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRIDS	39	52	15
P1083 P3-50 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRID CAVITY GAPS	31	42	10
P1084 P3-51 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON RESONANT CAVITIES	47	58	27
P1085 P3-52 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON MAGNETIC COUPLING LOOPS	22	30	7
P1086 P3-53 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON FILAMENTS	39	52	15
P1087 P3-54 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON CATHODES	38	51	15

PLT HANS RESPONDING 'YES' BY SELECTED GNPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

TASK	SPC 001	SPC 002	SPC 003	DESCRIPTION
01-75C				
P1000 P3-55 00 YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLECTRON OUTPUT LEADS	33	75	13	
P1009 P3-56 00 YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES FILAMENTS	5	4	5	
P1009 P3-57 00 YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES CATHODES	5	4	5	
P1091 P3-58 00 YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MODULATOR GRIDS	4	4	2	
P1092 P3-59 00 YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ANODES	5	4	5	
P1093 P3-60 00 YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MELINES	3	3	2	
P1094 P3-61 00 YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES COLLECTORS	4	4	2	
P1095 P3-62 00 YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MAGNETS	5	7	2	
P1096 P3-63 00 YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ATTENUATORS	5	6	5	
P1097 P3-64 00 YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE CIRCULATORS	4	4	2	
P1098 P3-65 00 YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER SIGNAL CAVITIES	4	4	2	
P1099 P3-66 00 YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER ISOLATORS	1	1	0	
P1100 P3-67 00 YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER VARACTOR DIODES	4	6	0	
P1101 P3-68 00 YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE ISOLATORS	2	3	0	
P1102 P3-69 00 YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER REVERSE-BIAS BATTERIES	1	1	0	
P1103 P3-70 00 YOU PERFORM TASKS ON ANODES	14	20	5	
P1104 P3-71 00 YOU PERFORM TASKS ON ANODE COOLING PINS	5	8	0	
P1105 P3-72 00 YOU PERFORM TASKS ON COUPLING LOOPS	9	13	2	
P1106 P3-73 00 YOU PERFORM TASKS ON HEATER LEADS	16	24	2	
P1107 P3-74 00 YOU PERFORM TASKS ON RESONANT CAVITIES	19	27	5	
P1108 P3-75 00 YOU PERFORM TASKS ON CATHODES	19	27	5	
P1109 P3-76 00 YOU PERFORM TASKS ON MAGNETS	23	32	7	
P1110 P1-01 00 YOU USE OR REFER TO STORAGE REGISTERS	24	21	30	
P1111 P1-02 00 YOU USE OR REFER TO SHIFT REGISTERS	25	21	32	
P1112 P1-03 00 YOU USE OR REFER TO LOGIC SYMBOLS OF SHIFT REGISTERS	23	17	32	
P1113 P1-04 00 YOU USE OR REFER TO LOGIC SYMBOLS OF STORAGE REGISTERS	23	18	30	REGISTERS
P1114 P1-05 00 YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	21	17	27	
P1115 P1-06 00 YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF REGISTERS	24	21	30	

ACT HARS RESPONDING YES BY SELECTED GAPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

U-15A

SPC SPC
001 002 003

0110 01-07 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A
SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES
HAVE PASSED

24 23 27

0117 02-01 DO YOU WORK WITH DIGITAL COUNTERS, REGISTERS, OR
STORAGE DEVICES IN YOUR PRESENT JOB

36 42 30

0118 02-02 DO YOU USE OR REFER TO OILAY LINES

26 24 13

0119 02-03 DO YOU USE OR REFER TO MAGNETIC CORES

11 15 2

0120 02-04 DO YOU USE OR REFER TO MAGNETIC DRUMS

10 14 2

0121 02-05 DO YOU USE OR REFER TO MAGNETIC TAPES

12 4 17

0122 02-06 DO YOU USE OR REFER TO ACCESS TIME OR SPEED OR
MEMORY SYSTEMS

14 14 15

0123 02-07 DO YOU USE OR REFER TO WORD CAPACITY OF MEMORY
SYSTEMS

12 8 17

0124 02-08 DO YOU USE OR REFER TO VOLATILITY OF MEMORY SYSTEMS

4 7 10

0125 02-09 DO YOU USE OR REFER TO LOGIC SYMBOL OF DELAY LINES

15 16 10

0126 03-01 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

26 27 25

0127 03-02 DO YOU COMPUTE OUTPUT VOLTAGES FOR ELECTROMECHANICAL
DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT
VOLTAGES

5 4 5

0128 03-03 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

4 3 5

0129 03-04 DO YOU COMPUTE ANALOG VOLTAGES FOR GIVEN BINARY
COUNTS IN ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS

5 4 7

0130 03-05 DO YOU PERFORM SAMPLE FUNCTION TASKS ON VARIABLE TIME
ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS

8 10 5

0131 03-06 DO YOU PERFORM HOLD FUNCTION TASKS ON VARIABLE TIME
ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS

6 7 5

0132 03-07 DO YOU PERFORM COMPARE FUNCTION TASKS ON VARIABLE
TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS

6 8 2

0133 03-08 DO YOU PERFORM DIGITIZE FUNCTION TASKS ON VARIABLE
TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS

6 8 2

0134 03-09 DO YOU PERFORM DON'T REMEMBER WHICH FUNCTION TASKS
ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER
CIRCUITS

5 7 2

0135 03-10 DO YOU USE OR REFER TO SAMPLE FUNCTION OF A/D
CONVERTERS

8 7 10

0136 03-11 DO YOU USE OR REFER TO HOLD FUNCTION OF A/D
CONVERTERS

7 7 7

0137 03-12 DO YOU USE OR REFER TO COMPARE FUNCTION OF A/D
CONVERTERS

7 8 5

0138 03-13 DO YOU USE OR REFER TO DIGITAL FUNCTION OF A/D
CONVERTERS

8 7 10

0139 03-14 DO YOU PERFORM ANY TASKS ON MECHANICAL ANALOG-TO-
DIGITAL (A/D) CONVERTERS

6 8 2

DIGITAL TO ANALOG CONVERTERS

STORAGE DEVICES

PCY PARTS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DT-TASK		SPC	SPC	SPC	PHANTASTRONS
		001	002	003	
W110	W1-01 DO YOU WORK WITH PHANTASTRON CIRCUITRY IN YOUR PRESENT JOB	40	61	25	PHANTASTRONS
W111	W1-01 IN YOUR PRESENT JOB DO YOU WORK WITH SCHMITT TRIGGER CIRCUITS	52	66	27	
W112	W2-02 DO YOU TRACE DATA FLOW THROUGH SCHMITT TRIGGER SCHEMATIC DIAGRAMS	76	58	25	
W113	W2-03 DO YOU USE OR REFER TO SCHMITT TRIGGER LOGIC SYMBOLS	31	39	15	CABLE FABRICATION
W114	W3-01 IN YOUR PRESENT JOB DO YOU FABRICATE MULTICONDUCTOR CABLES	41	45	32	
W115	W3-02 DO YOU FABRICATE COAXIAL CABLES	43	49	32	
S116	S1-01 IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS ON VISUAL READOUT SYSTEMS	59	59	60	INPUT/OUTPUT DEVICES
S117	S1-02 DO YOU PERFORM ANY TASKS ON MIXIE LIGHTS OR MIXIL	14	7	25	
S118	S1-03 DO YOU ANALYZE MIXIE LIGHT DECODEM SYSTEMS USING BOOLEAN ALGEBRA	3	3	2	
S119	S2-01 DO YOU WORK WITH PHOTO TUBES IN YOUR PRESENT JOB	76	77	72	PHOTO SENSITIVE DEVICES
S120	S3-01 IN YOUR PRESENT JOB DO YOU WORK WITH CHOPPER CIRCUITS	20	28	5	
S121	S3-02 DO YOU MEASURE EXCITATION FREQUENCIES	4	6	0	
S122	S3-03 DO YOU MEASURE VOLTAGE-CURRENT PHASE RELATIONSHIPS	5	8	0	SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS)
S123	S3-04 DO YOU USE OR REFER TO EXCITATION FREQUENCIES	4	6	0	
S124	S3-05 DO YOU USE OR REFER TO VOLTAGE-CURRENT PHASE RELATIONSHIPS	7	11	0	
S125	S3-06 DO YOU USE SERVOS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	7	11	0	
S126	S3-07 DO YOU USE DETECTORS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	8	13	0	
S127	S3-08 DO YOU USE ERROR SIGNAL DEVICES IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	14	20	5	
S128	S3-09 DO YOU USE COMPARISON CIRCUITS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	10	13	5	
Y129	Y1-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH INFRARED SYSTEMS	23	27	15	
Y130	Y1-02 DO YOU INSPECT INFRARED SYSTEMS	21	27	10	
Y131	Y1-03 DO YOU CLEAN INFRARED SYSTEMS	23	28	13	
Y132	Y1-04 DO YOU ADJUST OR CALIBRATE INFRARED SYSTEMS	21	24	15	
Y133	Y1-05 DO YOU OPERATE INFRARED SYSTEMS	21	24	15	
Y134	Y1-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF INFRARED SYSTEMS	16	20	10	INFRARED
Y135	Y1-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF INFRARED SYSTEMS	16	20	10	
Y136	Y1-08 DO YOU TROUBLESHOOT JOHN TO INFRARED SYSTEM COMPONENT PARTS	15	18	10	
Y137	Y1-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF INFRARED SYSTEMS	18	24	7	
Y138	Y1-10 DO YOU REMOVE OR REPLACE INFRARED SYSTEM COMPONENT PARTS	14	21	7	

PC, MMS #LSM0196, RES. BY STECIE GARD

BASE GROUP SUMMARY
FISCAL YEAR MEMBERS PARTICIPATING

FILED IN MEMBERS PL 45091-6

07-130

TIME	DATE	LOCATION	DESCRIPTION	SPC GOI	SPC J02	SPC J03
11109	11-11	00	YOU USE OR REFER TO FAR REGION	0	0	0
11110	11-12	00	YOU USE OR REFER TO INTERMEDIATE REGION	0	0	0
11111	11-13	00	YOU USE OR REFER TO NEAR REGION	0	0	0
11112	11-14	00	YOU USE OR REFER TO MICROM	2	1	2
11113	11-15	00	YOU USE OR REFER TO MAM	1	0	2
11114	11-16	00	YOU USE OR REFER TO BLACK BODIES	1	0	2
11115	11-17	00	YOU USE OR REFER TO ASSORTION	4	3	5
11116	11-18	00	YOU USE OR REFER TO SCATTERING	4	3	5
11117	11-19	00	YOU USE OR REFER TO ABSOLUTE ZERO	3	1	5
11118	11-20	00	YOU PERFORM TASKS ON KLITZ	0	0	0
11119	11-21	00	YOU PERFORM TASKS ON TARGET BUTTONS	0	0	0
11120	11-22	00	YOU PERFORM TASKS ON LECTRON LENSES	0	0	0
11121	11-23	00	YOU PERFORM TASKS ON OCULAR LENSES	3	1	5
11122	11-24	00	YOU PERFORM TASKS ON CORRECTION LENSES	2	0	5
11123	11-25	00	YOU PERFORM TASKS ON FILTERS	13	13	13
11124	11-26	00	YOU PERFORM TASKS ON SPHERICAL MIRRORS	10	14	2
11125	11-27	00	YOU PERFORM TASKS ON PLANE MIRRORS	4	1	7
11126	12-01	00	DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH LASERS	0	0	0
11127	12-02	00	YOU INSPECT LASER SYSTEMS	0	0	0
11128	12-03	00	YOU CLEAN LASER SYSTEMS	0	0	0
11129	12-04	00	YOU OPERATE LASER SYSTEMS	0	0	0
11130	12-05	00	YOU OPERATE LASER SYSTEMS	0	0	0
11131	12-06	00	YOU TROUBLESHOOT WIRE CONNECTIONS OF LASER SYSTEMS	0	0	0
11132	12-07	00	YOU TROUBLESHOOT MAJOR ASSEMBLIES OF LASER SYSTEMS	0	0	0
11133	12-08	00	YOU TROUBLESHOOT TO COMPONENT PARTS OF LASER SYSTEMS	0	0	0
11134	12-09	00	YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF LASER SYSTEMS	0	0	0
11135	12-10	00	YOU REMOVE OR REPLACE COMPONENT PARTS OF LASER SYSTEMS	0	0	0
11136	12-11	00	YOU USE OR REFER TO ANGSTROMS (A)	0	0	0
11137	12-12	00	YOU USE OR REFER TO ELECTRON ENERGY LEVELS	0	0	0
11138	12-13	00	YOU USE OR REFER TO GROUND STATE	0	0	0
11139	12-14	00	YOU USE OR REFER TO EXCITED STATE	0	0	0
11140	12-15	00	YOU USE OR REFER TO PACET OF RADIATION	0	0	0
11141	12-16	00	YOU USE OR REFER TO PHOTONS	0	0	0
11142	12-17	00	YOU USE OR REFER TO SPONTANEOUS EMISSION	0	0	0
11143	12-18	00	YOU USE OR REFER TO STIMULATED EMISSION	0	0	0
11144	12-19	00	YOU USE OR REFER TO COHERENCE OR INCOHERENCE	0	0	0
11145	12-20	00	YOU USE OR REFER TO INVASION LEVEL	0	0	0
11146	12-21	00	YOU USE OR REFER TO MONOCHROMATIC	0	0	0
11147	12-22	00	YOU WORK WITH ACTIVE MATERIALS	0	0	0
11148	12-23	00	YOU WORK WITH PUMPING SOURCES	0	0	0
11149	12-24	00	YOU WORK WITH FULL SILVERED LIOOB REFLECTIVE MATERIALS	0	0	0

PCT MARS RESPONDING VTES BY SELECTED GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UT-1SR	SPC 001	SPC 002	SPC 003
T1210 T2-26 00 YOU WORK WITH HALF SILVERED 1928 REFLECTIVE I MIRRORS	0	0	0
T1211 T2-26 00 YOU WORK WITH MELICAL FLASMTUBES	0	0	0
T1212 T2-27 00 YOU WORK WITH RUBY	0	0	0
T1213 T2-28 00 YOU WORK WITH MELIUM-NEON	0	0	0
T1214 T2-29 00 YOU WORK WITH MELIUM-ARGON	0	0	0
T1215 T2-30 00 YOU WORK WITH KEMON	0	0	0
T1216 T2-31 00 YOU WORK WITH CESIUM-MELIUM	0	0	0
T1217 T2-32 00 YOU WORK WITH ARGON	0	0	0
T1218 T2-33 00 YOU WORK WITH MEOXYMIUM IN GLASS	0	0	0
T1219 T2-34 00 YOU WORK WITH GALLIUM ARSENIOE	0	0	0
T1220 T3-01 IN YOUR PRESENT JOB 00 YOU WORK WITH OISPLAY TUBES. SUCH AS OIRLCT VIEW STORAGE IGVSTI OR MULTIPLE MODE STORAGE TUBES IMNST	9	10	7
T1221 T3-02 00 YOU INSPECT OYST ON MMST	8	10	5
T1222 T3-03 00 YOU CLEAN OYST OR MMST	7	8	5
T1223 T3-04 00 YOU ADJUST OR CALIBRATE OYST OR MMST	6	8	2
T1224 T3-05 00 YOU OPERATE SYSTEMS THAT CONTAIN OYST OR MMST	8	10	5
T1225 T3-06 00 YOU TROUBLESHOOT OYST OR MMST	8	10	5
CIRCUITS			
T1226 T3-07 00 YOU REMOVE OR REPLACE OYST OR MMST TUBES FROM MAJOR ASSEMBLIES OR UNITS	8	10	5
T1227 T3-08 00 YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF OYST	4	4	2
T1228 T3-09 00 YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF MMST	1	1	0
T1229 T3-10 00 YOU PERFORM TASKS ON FLOOD GUNS	0	0	0
T1230 T3-11 00 YOU PERFORM TASKS ON WRITE GUNS	5	6	2
T1231 T3-12 00 YOU PERFORM TASKS ON ATTACK GUNS	0	0	0
T1232 T3-13 00 YOU PERFORM TASKS ON ERASE GUNS	3	4	0
T1233 T3-14 00 YOU PERFORM TASKS ON STORAGE GRIGOS	1	1	0
T1234 T3-01 IN YOUR PRESENT JOB 00 YOU PERFORM ANY PROGRAMMING TASKS	7	7	7
U1235 U1-02 00 YOU USE OR REFER TO DECIMAL SYSTEMS	1	4	5
U1236 U1-03 00 YOU USE OR REFER TO PROGRAMS	3	3	2
U1237 U1-04 00 YOU USE OR REFER TO HEXIDECIMAL SYSTEMS	1	1	0
U1238 U1-05 00 YOU USE OR REFER TO 8-4-2-1 SYSTEMS	3	3	2
U1239 U1-06 00 YOU USE OR REFER TO FOUR SYSTEMS	1	0	2
U1240 U1-07 00 YOU USE OR REFER TO BINARY SYSTEMS	7	7	7
U1241 U1-08 00 YOU USE OR REFER TO TIME-SHARING	1	0	2
U1242 U1-09 00 YOU USE OR REFER TO DATA WOMOS	3	1	5
U1243 U1-10 00 YOU USE OR REFER TO ADDRESS WOMOS	2	1	2
U1244 U1-11 00 YOU USE OR REFER TO ADDRESS/SUBADDRESS	2	1	2
U1245 U1-12 00 YOU USE OR REFER TO STEERING/INFORMATION	2	1	2
U1246 U1-13 00 YOU USE OR REFER TO INFORMATION WOMOS	3	1	5
U1247 U1-14 00 YOU PERFORM TASKS ON SINGLE LEVEL PROGRAMMING	1	1	5
U1248 U1-15 00 YOU PERFORM TASKS ON MULTI-LEVEL PROGRAMMING	1	0	7

PROGRAMMING

DISPLAY TUBES

PLT HAS RESPONDING YES BY SELECTED GRPS

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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

U1-TSK

SPC SPC SPC
001 002 003

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

DB AND POWER RATIOS

68 79 50

25 35 7

27 37 10

1 1 0