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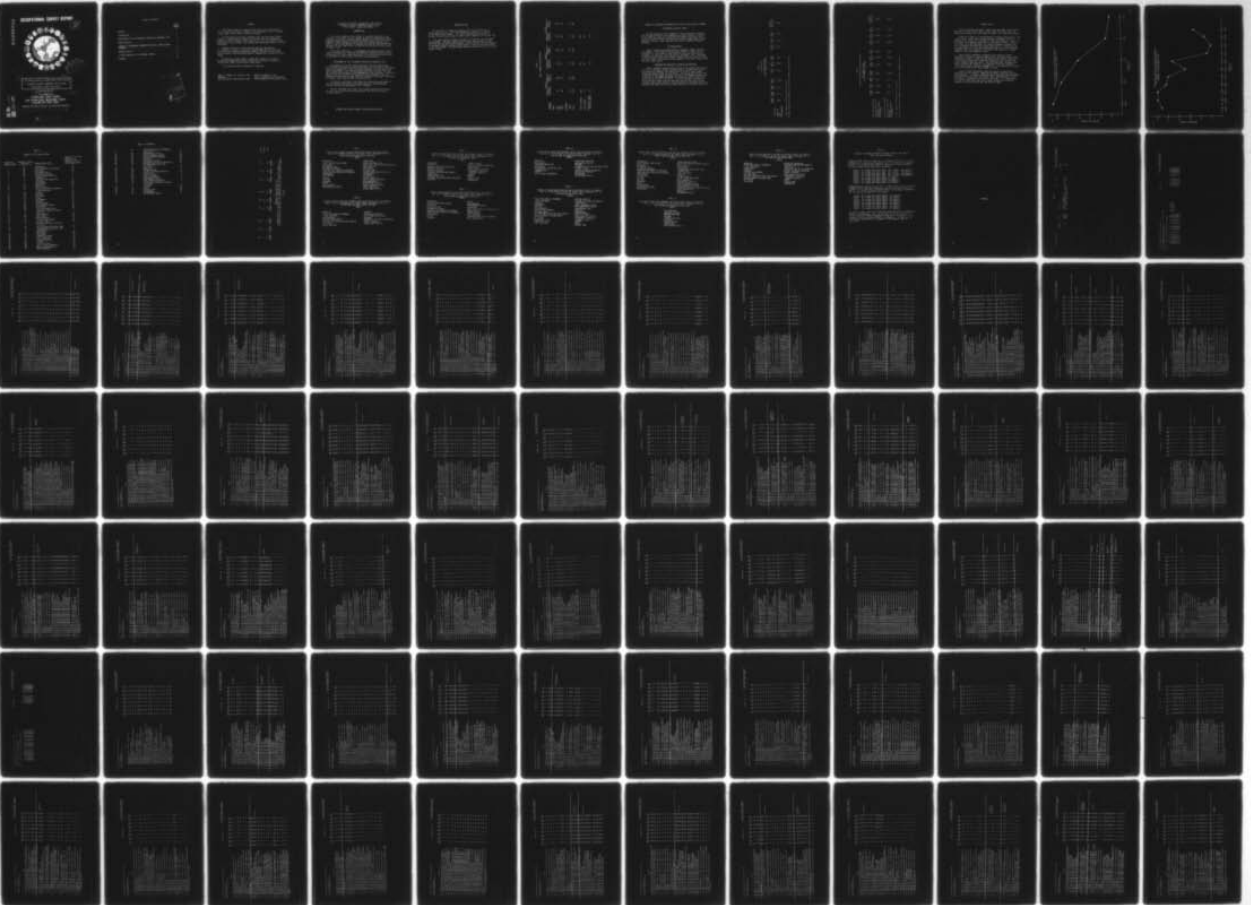
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ELECTRONICS PRINCIPLES OCCUPATIONAL SURVEY REPORT, INTEGRATED A--ETC(U)
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OCCUPATIONAL SURVEY REPORT

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ELECTRONICS PRINCIPLES OCCUPATIONAL SURVEY REPORT
INTEGRATED AVIONICS COMPONENT CAREER LADDER
AFSCS 326X1C, 326X1D, AND 326X1E.

14 AFPT-90-326-222 ✓

11 27 DECEMBER 1976

OCCUPATIONAL SURVEY BRANCH
USAF OCCUPATIONAL MEASUREMENT CENTER
LACKLAND AFB TEXAS 78236

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TABLE OF CONTENTS

	<u>PAGE NUMBER</u>
PREFACE	2
INTRODUCTION	3
DEVELOPMENT OF THE ELECTRONICS PRINCIPLES INVENTORY (EPI)	3
ADMINISTRATION	4
SUMMARY OF BACKGROUND INFORMATION FOR 326X1 CAREER LADDER PERSONNEL	6
GENERAL RESULTS	9
IN DEPTH ANALYSIS OF THE GENERAL RESULTS	12
APPENDIX	23

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PREFACE

This report presents a summary of the results of a detailed Air Force Electronics Principles survey of the Integrated Avionics Component career ladder, AFSCs 326X1C, 326X1D, and 326X1E.

The Electronics Principles Inventory (EPI) was developed by Major Thomas J. O'Connor and Mr. Hendrick W. Ruck and the survey data were analyzed by Major O'Connor and Mr. Guy B. Cole. 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
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ELECTRONICS PRINCIPLES OCCUPATIONAL SURVEY REPORT
INTEGRATED AVIONICS COMPONENT CAREER LADDER
AFSCs 326X1C, 326X1D, AND 326X1E

INTRODUCTION

This report summarizes the results of the administration of the Electronics Principles survey to airmen assigned to Integrated Avionics Component specialties including 326X1C, Manual Avionics AGE Test Station Operator; 326X1D, Automatic Avionics AGE Test Station Operator; and 326X1E, Avionics AGE Operator of Internal and External Penetration Aids. The data for this report were collected during the period 1 May through 30 August, 1976.

This report describes: (1) development and administration of the survey instrument; (2) summaries of background information which reflect the population of the survey sample; and (3) electronics principles used by personnel at various points in their career progression.

DEVELOPMENT OF THE ELECTRONICS PRINCIPLES INVENTORY (EPI)

Development of the EPI involved personnel from the Occupational Survey Branch working on the project who were well qualified in theoretical physics and electronics as well as having expertise in task analysis and survey development. Over 300 maintenance personnel from SAC, TAC, ADC, MAC, and AFCS participated in the development of the inventory. Electronics experts from the five ATC training centers, who averaged 12 years of maintenance experience and four years of electronics 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 EPI contained 1,257 items in 62 subject matter areas covering all electronics principles training given at the five ATC technical training centers.

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ADMINISTRATION

The Electronics Principles Inventory (EPI) was administered in person and by mail to 1,097 airmen worldwide assigned to all shreds of the 326XX career ladders. This total represents approximately 31 percent of the airmen assigned to these career ladders, as of 30 June 1976.

This report mainly presents the results of the data from the 326X1 career ladder. Two other separate reports have been written to cover the 326X0 and the 326X2 career ladders. Table 1 reflects the distribution of assigned personnel and percentage sampled in each of the three shreds of the 326X1 ladder. Responses were received from over 20 percent of each shred of 326X1.

TABLE 1
326X1 COMMAND REPRESENTATION

COMMAND	326X1C		326X1D		326X1E	
	PERCENT OF ASSIGNED	PERCENT OF SAMPLE	PERCENT OF ASSIGNED	PERCENT OF SAMPLE	PERCENT OF ASSIGNED	PERCENT OF SAMPLE
CONUS						
ATC	8	16	8	10	8	16
SAC	12	20	13	20	16	14
AFSC	1	1	1	-	-	-
TAC	68	50	71	62	69	63
OVERSEAS						
USAFE	11	13	7	8	7	7
TOTAL	100%	100%	100%	100%	100%	100%
TOTAL ASSIGNED	290		738		258	
TOTAL SAMPLE	70		147		87	
PERCENT OF TOTAL ASSIGNED SAMPLED	24%		20%		34%	

SUMMARY OF BACKGROUND INFORMATION FOR 326X1 CAREER LADDER PERSONNEL

Assignment to Career Ladder

Over 60 percent of the respondents in each shred were assigned to their present specialty after completing resident technical training. Of the remainder, most were retrained from another specialty, with a few being reclassified or converted from another career ladder without technical training. None reported direct duty assignment from basic training.

Job Satisfaction

Table 2 compares Integrated Avionics Component (326X1) personnel with members in the 326X0 and 326X2 career ladders in terms of job satisfaction. Also shown is data reflecting the job satisfaction of incumbents in other Air Force specialties surveyed in 1975. Personnel in the D shred of 326X1, the A shred of 326X0, and the C shred of 326X2 find their jobs less interesting than members of the other shreds within the same career ladder.

Perceived Utilization of Talents and Training

Table 3 presents the perceived utilization of talents and training factors for the 326X1 shreds, the 326X0 shreds, and the 326X2 shreds. For comparison purposes, the average results from 35 other career ladders surveyed in 1975 are also given. The survey data reflect that 42 percent of the 326X0A personnel, 45 percent of 326X1D personnel, and 41 percent of the 326X2C personnel felt that their training was being utilized very little or not at all. A similar pattern is noted for these same AFSCs when comparing how their job utilizes their talents. A highly significant finding is that 63 percent of the 326X2C personnel perceive that their job utilizes their talents very little or not at all.

TABLE 2
JOB SATISFACTION
TOTAL SAMPLE BY SHRED
(PERCENT MEMBERS RESPONDING)

	326X0A (N=36)	326X0B (N=70)	326X0C* (N=3)	326X0D (N=33)	326X1C (N=70)	326X1D (N=147)	326X1E (N=87)	326X2A (N=164)	326X2B (N=146)	326X2C (N=155)	OTHER AF SPECIALTIES (N=21,107)**
INTERESTING	59	80	67	70	74	54	71	59	57	35	69
SO-SO	22	7	-	9	10	23	18	21	20	26	15
DULL	19	13	33	18	16	23	11	19	21	39	16
NOT RESPONDING	-	-	-	3	-	-	-	1	2	-	-

I FIND MY JOB:

* Survey sample too limited for significant results

** Based on responses from incumbents in 35 other career ladders surveyed during 1975.

TABLE 3
PERCEIVED UTILIZATION OF TALENTS AND TRAINING

	TOTAL SAMPLE BY SHRED (PERCENT MEMBERS RESPONDING)											OTHER AF SPECIALTIES (N=21,107) **
	326X0A (N=36)	326X0B (N=70)	326X0C* (N=3)	326X0D (N=33)	326X1C (N=70)	326X1D (N=147)	326X1E (N=87)	326X2A (N=164)	326X2B (N=146)	326X2C (N=155)		
MY JOB UTILIZES MY TALENTS:												
VERY LITTLE OR NOT AT ALL	33	16	33	24	27	42	24	40	37	63	26	
FAIRLY WELL	28	39	-	39	40	34	29	30	33	25	26	
QUITE WELL TO PERFECTLY	39	45	67	37	33	22	46	30	29	12	48	
NOT RESPONDING	-	-	-	-	-	2	1	-	1	-	-	
MY JOB UTILIZES MY TRAINING:												
VERY LITTLE OR NOT AT ALL	42	16	33	30	33	45	25	25	27	41	26	
FAIRLY WELL	17	33	-	33	33	33	33	38	38	39	26	
QUITE WELL TO PERFECTLY	41	51	67	34	34	21	42	35	33	19	48	
NOT RESPONDING	-	-	-	3	-	1	-	2	2	1	-	

* Survey sample too limited for significant results

** Based on responses from incumbents in 35 other career ladders surveyed during 1975.

GENERAL RESULTS

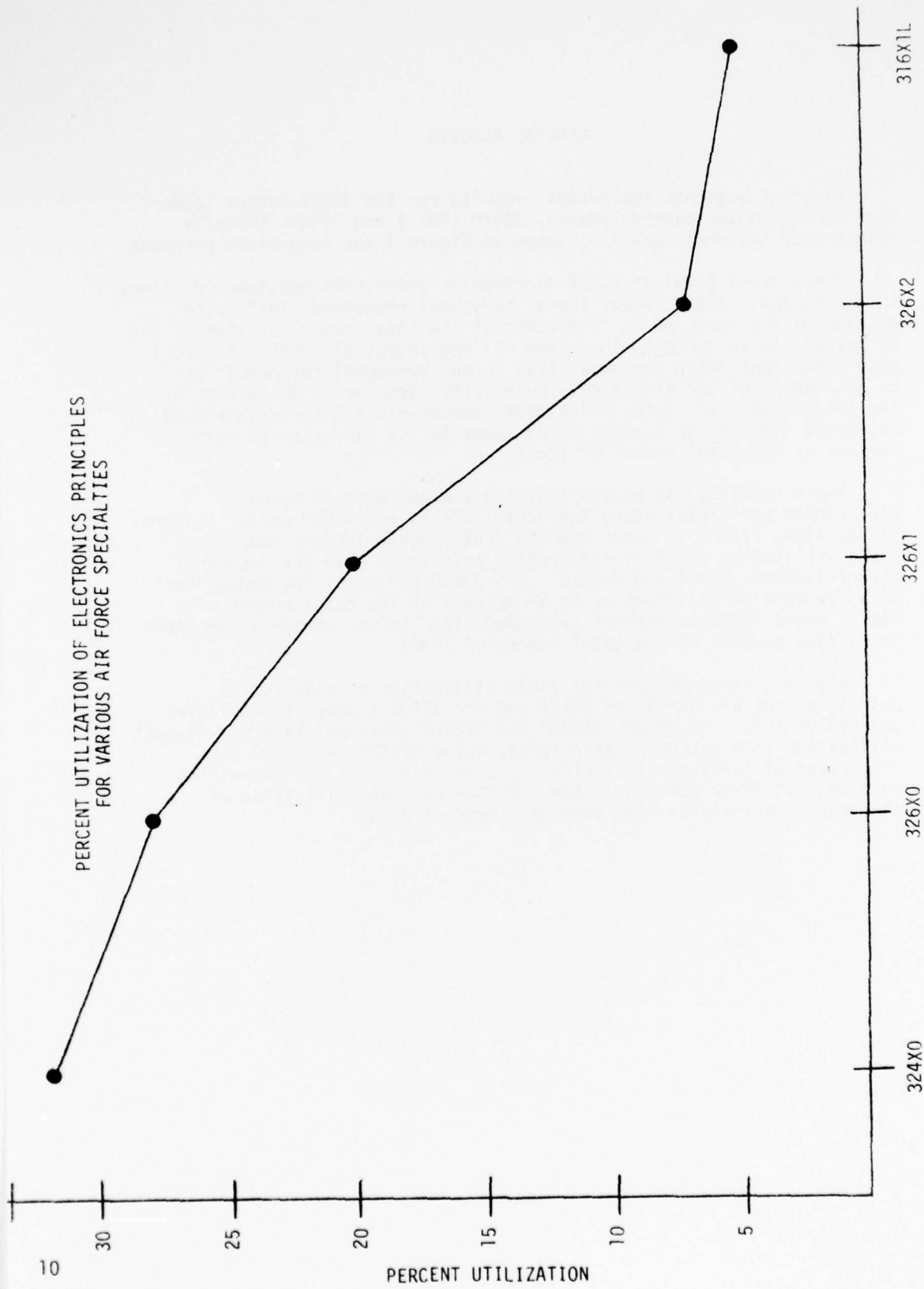
Figure 1 presents the overall results for the 326XX career ladders. Data for two other career ladders, 324X0 (PMEL) and 316X1L (Missile Maintenance Systems), are also shown on Figure 1 for comparison purposes.

There are a total of 1,257 electronics principles questions or items in the survey. 326X1 career ladder personnel responded "Yes" to an average of 255 items or to 20 percent of the total number of items. The 20 percent is an average figure for all the shreds of 326X1. Figure 1 also shows that 326X0 personnel (all shreds averaged) responded "Yes" to an average of 352 electronics principles items or to 28 percent of the total number of items, while 326X2 personnel (all shreds averaged) responded "Yes" to an average of 83 items in the survey or to seven percent of the total number of items.

These results, therefore, indicate a wide range of usage of electronics principles among the 326X0, 326X1, and 326X2 career ladders. In addition, Figure 1, shows how the 326XX career ladders compare in field utilization of basic electronics principles with the two other career ladders, 324X0 and 316X1L. AFS 324X0 personnel responded "Yes" to an average of 401 items or to 32 percent of the total number of items, while 316X1L personnel responded "Yes" to an average of 58 items or to five percent of the total number of items.

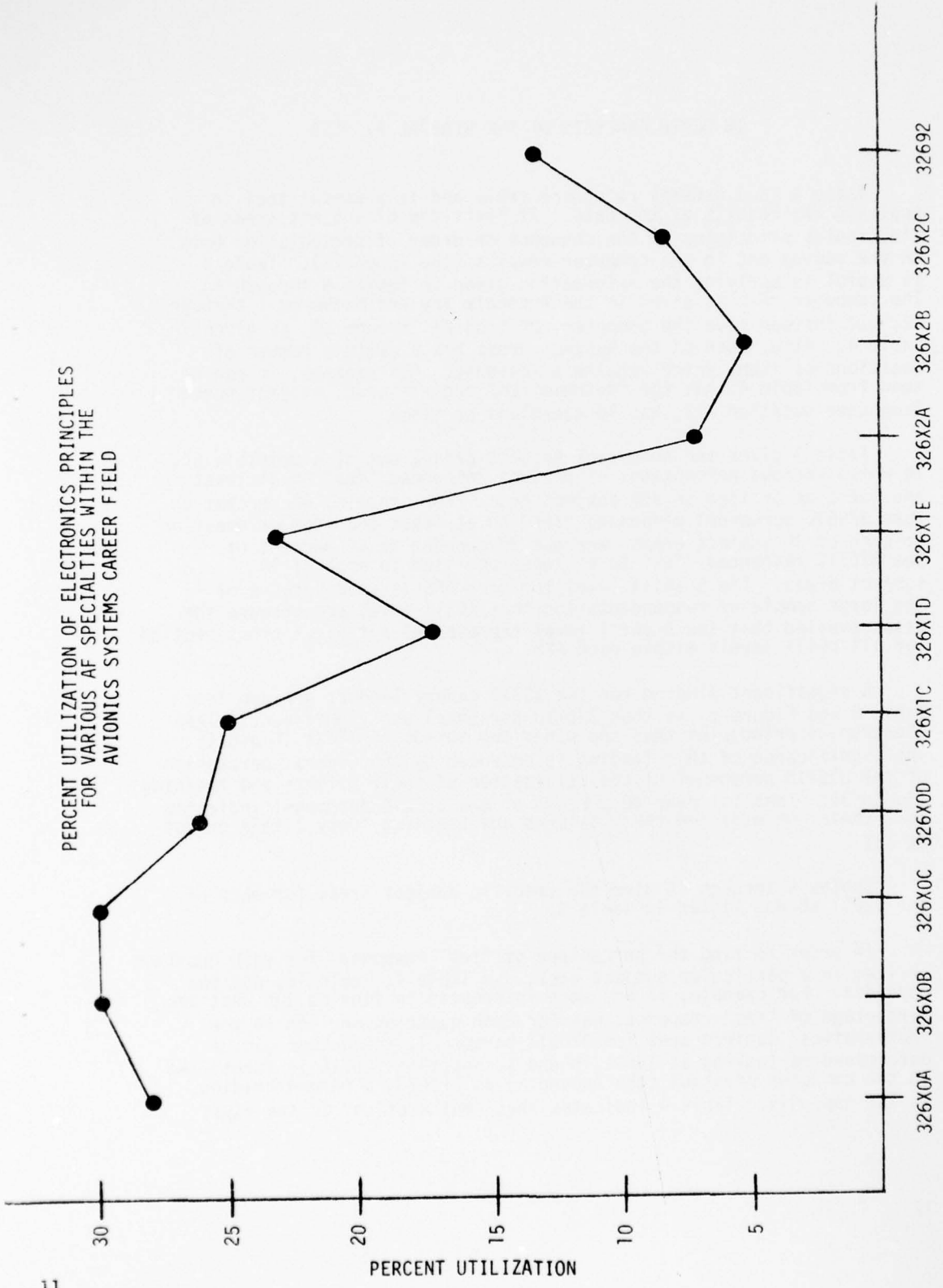
Figure 2 shows the percent field utilization of electronics principles for all shreds of 326XX and for 32692 (Integrated Avionics Superintendent). As shown, 326X0B and 326X0C personnel have the highest utilization of electronics principles, while 326X2C personnel show the lowest utilization of electronics principles. It is interesting to note that 32692 personnel show a higher percent utilization of electronics principles than does any shred of 326X2.

PERCENT UTILIZATION OF ELECTRONICS PRINCIPLES
FOR VARIOUS AIR FORCE SPECIALTIES



SPECIALTIES
FIGURE 1

PERCENT UTILIZATION OF ELECTRONICS PRINCIPLES
FOR VARIOUS AF SPECIALTIES WITHIN THE
AVIONICS SYSTEMS CAREER FIELD



SPECIALTIES
FIGURE 2

IN DEPTH ANALYSIS OF THE GENERAL RESULTS

Table 4 is a general reference table and is a useful tool in applying the results of the data. It lists the 62 subject areas of electronics principles in the sequence or order of presentation both in the survey and in the computer results (the Appendix). Table 4 is useful in applying the information given in Tables 6 through 14. The computer results given in the Appendix are not numbered 1 through 62, but instead have the computer notation A1 through U2, as given in Table 4. Also, each of the subject areas has a certain number of questions or items which require a response. For example, it can be seen from Table 4 that the "Mathematics" subject area, subject number 1 (computer notation A1), has 14 questions or items.

Table 5 gives the number of subject areas, out of a possible 62, in which various percentages of persons responded "Yes" to at least one question or item in any subject area. For example, 50 percent or more 32651C personnel responded "Yes" to at least one item or question in each of 30 subject areas, whereas 30 percent to 49 percent of the 32651C responded "Yes" to at least one item in each of 14 subject areas. The 5-skill level for each AFS is used because of the large sample of respondents for that skill level and because the data revealed that the 5-skill level represented a typical cross-section for all skill levels within each AFS.

A significant finding for the 326X1 career ladder, derived from Table 5 and Figure 2, is that 326X1D personnel use significantly less electronics principles than the other two shreds of 326X1 (C and E). The significance of this finding is enhanced by the general perception of the 326X1D personnel of the utilization of their talents and training (Table 3). That is, over 40 percent of the 316X1D personnel indicated that their job utilized their talents and training "very little or not at all".

Tables 6 through 14 give the specific subject areas for each of the 32651 shreds listed in Table 5.

In order to find the percentage of "Yes" responses for each question or item in a particular subject area, use Table 4, Table 15, and the Appendix. For example, if one were interested in finding out what the percentage of "Yes" responses was for each question or item in the "Mathematics" subject area for 32651C personnel, the answer can be determined by looking at Table 15 and seeing that 32651C is identified in the computer printout (the Appendix) as SPC028, a column heading in the Appendix. Table 4 indicates that "Mathematics" is the first

subject area and has the computer printout (the Appendix) designation of A1. Thus, on page 4 of the Appendix, items 1 through 14 (designated as A1-01 through A1-14) are read under the column designated as SPC028. It can be seen from page 4 that 8 percent of the sample of 32651C indicated that they have to "Find the Square Root of a Quantity" (item A1-04).

Large patterns of "Yes" responses can be immediately determined by scanning through the Appendix. For example, page 4 of the Appendix shows a high pattern of "Yes" responses for all groups (SPC022 through SPC029) for items 24 through 29 or computer notation A3-01 through A3-06; whereas, for items 6 through 13 (A1-06 through A1-13), the pattern of "Yes" responses is low.

TABLE 4

Summary of EPI Subject Areas

<u>Sequence of Subject Areas</u>	<u>Computer Printout Notation</u>	<u>Subject Area Title</u>	<u>Number of Possible Responses or Number of Items in each Subject Area</u>
1	A1	Mathematics	14
2	A2	Direct Current and Voltage	9
3	A3	Resistance	28
4	B1	Multimeter Uses	9
5	B2	Alternating Current	6
6	B3	Inductors and Inductive Reactance	25
7	C1	Capacitors and Capacitive Reactance	36
8	C2	Transformers	43
9	C3	Magnetism	14
10	D1	RCL Circuits	44
11	D2	Series and Parallel Resonance (Time Constants)	10
12	D3	Filters	22
13	E1	Coupling	12
14	E2	Soldering	22
15	E3	Relays	19
16	F1	Microphones	13
17	F2	Speakers	15
18	F3	Oscilloscopes	12
19	G1	Semiconductor Diodes	50
20	G2	Transistors	24
21	G3	Transistor Amplifiers	49
22	H1	Solid-State Special Purpose Devices	6
23	H2	Power Supplies	29
24	H3	Oscillators	27
25	I1	Multivibrators	16
26	I2	Limiters and Clampers	10
27	I3	Electron Tubes	44
28	J1	Electron Tube Amplifiers and Circuits	7
29	J2	Special Purpose Electron Tubes	16
30	J3	Heterodyning, Modulation, and Demodulation	6
31	K1	AM Systems	28
32	K2	FM Systems	19
33	K3	Numbering Systems	10
34	L1	Logic Functions	13
35	L2	Boolean Equations	25
36	L3	Counters	24
37	M1	Timing Circuits	12
38	M2	Use of Signal Generators	10
39	M3	Motors and Generators	29
40	N1	Meter Movements	10

TABLE 4 (CONTINUED)

41	N2	Saturable Reactors and Magnetic Amplifiers	16
42	N3	Waveshaping Circuits	11
43	O1	Single Sideband Systems	30
44	O2	Pulse Modulation Systems	39
45	O3	Antennas	39
46	P1	Transmission Lines	31
47	P2	Waveguides and Cavity Resonators	50
48	P3	Microwave Amplifiers and Oscillators	76
49	Q1	Registers	7
50	Q2	Storage Devices	9
51	Q3	Digital to Analog Converters	14
52	R1	Phantastrons	1
53	R2	Schmitt Triggers	3
54	R3	Cable Fabrication	2
55	S1	Input/Output Devices	3
56	S2	Photo Sensitive Devices	1
57	S3	Synchronous Vibrations (Chopper Circuits)	9
58	T1	Infrared	27
59	T2	Lasers	34
60	T3	Display Tubes	14
61	U1	Programming	21
62	U2	DB and Power Ratios	3

TABLE 5

NUMBER OF SUBJECT AREAS, OUT OF A POSSIBLE 62, IN WHICH A SPECIFIED PERCENT
OF PERSONS IN EACH AFSC (50% OR MORE, 30 TO 49%, OR 0 TO 29%) MARKED
AT LEAST ONE "YES" RESPONSE.

	<u>32650A</u>	<u>32650B</u>	<u>32650D</u>	<u>32651C</u>	<u>32651D</u>	<u>32651E</u>	<u>32652A</u>	<u>32652B</u>	<u>32652C</u>
50%+	36	39	34	30	20	33	9	8	15
30-49%	7	6	6	14	16	9	7	6	4
0-29%	19	17	22	18	26	20	46	48	43

TABLE 6

THIRTY SUBJECT AREAS WITH HIGH JOB UTILIZATION OF BASIC ELECTRONICS.
THAT IS, 50 PERCENT OR MORE OF THE SURVEY SAMPLE RESPONDED "YES" TO
ONE OR MORE QUESTIONS WITHIN EACH AREA.

32651C

MATHEMATICS	TRANSISTORS
DIRECT CURRENT AND VOLTAGE	TRANSISTOR AMPLIFIERS
RESISTANCE	SOLID-STATE SPECIAL PURPOSE DEVICES
MULTIMETER USES	POWER SUPPLIES
ALTERNATING CURRENT	OSCILLATORS
INDUCTORS AND INDUCTIVE REACTANCE	ELECTRON TUBES
CAPACITORS AND CAPACITIVE REACTANCE	HETERODYNING, MODULATION, AND
TRANSFORMERS	DEMODULATION
RCL CIRCUITS	AM SYSTEMS
FILTERS	TIMING CIRCUITS
COUPLING	USE OF SIGNAL GENERATORS
SOLDERING	METER MOVEMENTS
RELAYS	WAVESHAPING CIRCUITS
OSCILLOSCOPES	SINGLE SIDEBAND SYSTEMS
SEMICONDUCTOR DIODES	CABLE FABRICATION
	DB AND POWER RATIOS

TABLE 7

FOURTEEN SUBJECT AREAS WITH MODERATE JOB UTILIZATION OF BASIC ELECTRONICS.
THAT IS, 30 TO 49 PERCENT OF THE SURVEY SAMPLE RESPONDED "YES" TO
ONE OR MORE QUESTIONS WITHIN EACH AREA.

32651C

MAGNETISM	COUNTERS
SERIES AND PARALLEL RESONANCE (TIME CONSTANTS)	MOTORS AND GENERATORS
MULTIVIBRATORS	PULSE MODULATION SYSTEMS
LIMITERS AND CLAMPERS	ANTENNAS
ELECTRON TUBE AMPLIFIERS AND CIRCUITS	WAVEGUIDES AND CAVITY RESONATORS
FM SYSTEMS	SCHMITT TRIGGERS
LOGIC FUNCTIONS	INPUT-OUTPUT DEVICES

TABLE 8

EIGHTEEN SUBJECT AREAS WITH LOW JOB UTILIZATION OF BASIC ELECTRONICS.
 THAT IS, 29 PERCENT OR LESS OF THE SURVEY SAMPLE RESPONDED "YES" TO
 ANY QUESTION WITHIN EACH AREA.

32651C

MICROPHONES	STORAGE DEVICES
SPEAKERS	DIGITAL TO ANALOG CONVERTERS
SPECIAL PURPOSE ELECTRON TUBES	PHANTASTRONS
NUMBERING SYSTEMS	PHOTO SENSITIVE DEVICES
BOOLEAN EQUATIONS	SYNCHRONOUS VIBRATIONS
SATURABLE REACTORS AND MAGNETIC	(CHOPPER CIRCUITS)
AMPLIFIERS	INFRARED
TRANSMISSION LINES	LASERS
MICROWAVE AMPLIFIERS AND OSCILLATORS.	DISPLAY TUBES
REGISTERS	PROGRAMMING

TABLE 9

TWENTY SUBJECT AREAS WITH HIGH JOB UTILIZATION OF BASIC ELECTRONICS.
 THAT IS, 50 PERCENT OR MORE OF THE SURVEY SAMPLE RESPONDED "YES" TO
 ONE OR MORE QUESTIONS WITHIN EACH AREA.

32651D

MATHEMATICS	RELAYS
DIRECT CURRENT AND VOLTAGE	OSCILLOSCOPES
RESISTANCE	SEMICONDUCTOR DIODES
MULTIMETER USES	TRANSISTORS
ALTERNATING CURRENT	SOLID-STATE SPECIAL PURPOSE DEVICES
INDUCTORS AND INDUCTIVE REACTANCE	POWER SUPPLIES
CAPACITORS AND CAPACITIVE REACTANCE	TIMING CIRCUITS
TRANSFORMERS	METER MOVEMENTS
FILTERS	WAVEGUIDES AND CAVITY RESONATORS
SOLDERING	CABLE FABRICATION

TABLE 10

SIXTEEN SUBJECT AREAS WITH MODERATE JOB UTILIZATION OF BASIC ELECTRONICS.
THAT IS, 30 TO 49 PERCENT OF THE SURVEY SAMPLE RESPONDED "YES" TO
ONE OR MORE QUESTIONS WITHIN EACH AREA.

32651D

MAGNETISM	MOTORS AND GENERATORS
RCL CIRCUITS	WAVESHAPING CIRCUITS
TRANSISTOR AMPLIFIERS	ANTENNAS
OSCILLATORS	MICROWAVE AMPLIFIERS AND OSCILLATORS
HETERODYNING, MODULATION, AND	STORAGE DEVICES
DEMODULATION	DIGITAL TO ANALOG CONVERTERS
COUNTERS	INPUT-OUTPUT DEVICES
USE OF SIGNAL GENERATORS	PROGRAMMING
	DB AND POWER RATIOS

TABLE 11

TWENTY-SIX SUBJECT AREAS WITH LOW JOB UTILIZATION OF BASIC ELECTRONICS.
THAT IS, 29 PERCENT OR LESS OF THE SURVEY SAMPLE RESPONDED "YES" TO
ANY QUESTION WITHIN EACH AREA.

32651D

SERIES AND PARALLEL RESONANCE (TIME CONSTANTS)	BOOLEAN EQUATIONS
COUPLING	SATURABLE REACTORS AND MAGNETIC AMPLIFIERS
MICROPHONES	SINGLE SIDEBAND SYSTEMS
SPEAKERS	PULSE MODULATION SYSTEMS
MULTIVIBRATORS	TRANSMISSION LINES
LIMITERS AND CLAMPERS	REGISTERS
ELECTRON TUBES	PHANTASTRONS
ELECTRON TUBE AMPLIFIERS AND CIRCUITS	SCHMITT TRIGGERS
SPECIAL PURPOSE ELECTRON TUBES	PHOTO SENSITIVE DEVICES
AM SYSTEMS	SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS)
FM SYSTEMS	INFRARED
NUMBERING SYSTEMS	LASERS
LOGIC FUNCTIONS	DISPLAY TUBES

TABLE 12

THIRTY-THREE SUBJECT AREAS WITH HIGH JOB UTILIZATION OF BASIC ELECTRONICS.
THAT IS, 50 PERCENT OR MORE OF THE SURVEY SAMPLE RESPONDED "YES" TO
ONE OR MORE QUESTIONS WITHIN EACH AREA.

32651E

MATHEMATICS	TRANSISTOR AMPLIFIERS
DIRECT CURRENT AND VOLTAGE	SOLID-STATE SPECIAL PURPOSE DEVICES
RESISTANCE	POWER SUPPLIES
MULTIMETER USES	OSCILLATORS
ALTERNATING CURRENT	HETERODYNING, MODULATION, AND
INDUCTORS AND INDUCTIVE REACTANCE	DEMODULATION
CAPACITORS AND CAPACITIVE REACTANCE	LOGIC FUNCTIONS
TRANSFORMERS	COUNTERS
RCL CIRCUITS	TIMING CIRCUITS
FILTERS	USE OF SIGNAL GENERATORS
COUPLING	METER MOVEMENTS
SOLDERING	WAVESHAPING CIRCUITS
RELAYS	SINGLE SIDEBAND SYSTEMS
OSCILLOSCOPES	PULSE MODULATION SYSTEMS
SEMICONDUCTOR DIODES	MICROWAVE AMPLIFIERS AND OSCILLATORS
TRANSISTORS	CABLE FABRICATION
	INFRARED
	DB AND POWER RATIOS

TABLE 13

NINE SUBJECT AREAS WITH MODERATE JOB UTILIZATION OF BASIC ELECTRONICS.
THAT IS, 30 TO 49 PERCENT OF THE SURVEY SAMPLE RESPONDED "YES" TO
ONE OR MORE QUESTIONS WITHIN EACH AREA.

32651E

MULTIVIBRATORS
NUMBERING SYSTEMS
BOOLEAN EQUATIONS
ANTENNAS
TRANSMISSION LINES
REGISTERS
STORAGE DEVICES
PHANTASTRONS
INPUT-OUTPUT DEVICES

TABLE 14

TWENTY SUBJECT AREAS WITH LOW JOB UTILIZATION OF BASIC ELECTRONICS.
THAT IS, 29 PERCENT OR LESS OF THE SURVEY SAMPLE RESPONDED "YES" TO
ANY QUESTION WITHIN EACH AREA.

32651E

MAGNETISM
SERIES AND PARALLEL RESONANCE
(TIME CONSTANTS)
MICROPHONES
SPEAKERS
LIMITERS AND CLAMPERS
ELECTRON TUBES
ELECTRON TUBE AMPLIFIERS AND CIRCUITS
SPECIAL PURPOSE ELECTRON TUBES
AM SYSTEMS
FM SYSTEMS

MOTORS AND GENERATORS
SATURABLE REACTORS AND MAGNETIC
AMPLIFIERS
WAVEGUIDES AND CAVITY RESONATORS
DIGITAL TO ANALOG CONVERTERS
SCHMITT TRIGGERS
PHOTO SENSITIVE DEVICES
SYNCHRONOUS VIBRATIONS
(CHOPPER CIRCUITS)
LASERS
DISPLAY TUBES
PROGRAMMING

TABLE 15

READING THE COMPUTER PRINTOUTS (GPSM2A, GPSM2B, AND JOBINV)
WHICH ARE IN THE APPENDIX

GPSM2A (Appendix page 4 to page 46) is a summary which gives the percent of members of a group which responded "Yes" to the items in the survey booklet. At the top of each column of numbers on any page of GPSM2A are the following Group Identifiers and Groups:

- SPC022 - All airmen with DAFSC 326X1 (All shreds) (416 members)
- SPC023 - All airmen with DAFSC 32631 (All shreds) (63 members)
- SPC024 - All airmen with DAFSC 32651 (All shreds) (247 members)
- SPC025 - All airmen with DAFSC 32671 (All shreds) (106 members)
- SPC026 - All airmen with DAFSC 326X1C (70 members)
- SPC027 - All airmen with DAFSC 32631C (2 members)
- SPC028 - All airmen with DAFSC 32651C (49 members)
- SPC029 - All airmen with DAFSC 32671C (19 members)

GPSM2B (Appendix page 49 to page 91) is a summary which gives the percent of members of a group which responded "Yes" to the items in the survey booklet. At the top of each column of numbers on any page of GPSM2B are the following Group Identifiers and Groups:

- SPC030 - All airmen with DAFSC 326X1D (147 members)
- SPC031 - All airmen with DAFSC 32631D (26 members)
- SPC032 - All airmen with DAFSC 32651D (83 members)
- SPC033 - All airmen with DAFSC 32671D (38 members)
- SPC034 - All airmen with DAFSC 326X1E (87 members)
- SPC035 - All airmen with DAFSC 32631E (13 members)
- SPC036 - All airmen with DAFSC 32651E (51 members)
- SPC037 - All airmen with DAFSC 32671E (23 members)

To conserve space, some of the items have been abbreviated in GPSM2A and GPSM2B in the Appendix. Each item has been listed in its entirety in the Job Inventory (JOBINV) beginning on page 92 of the Appendix. For example, Task A1-01, page 4, GPSM2A, is incomplete. In order to find the complete statement, turn to page 92 of the Appendix and read item A1-01.

APPENDIX

APPENDIX

AF HUMAN RESOURCES LABORATORY
AIR FORCE SYSTEMS COMMAND

TABLE OF CONTENTS

REPORT NUMBER	REPORT ID	REPORT TITLE	TOC PAGE	PAGE NUMBER
1	TOC	TABLE OF CONTENTS		1
2	GPSM2A	PCT MBPS ANSWRNG YES FOR 326X1 DAFSC GRPS		2
3	GPSZ2B	PCT MBPS ANSWRNG YES FOR 326X1 DAFSC GRPS		47
4	JOBINV	JOB INVENTORY(DUTY/TASK TITLES)		92

AF HUMAN RESOURCES LABORATORY
AIR FORCE SYSTEMS COMMAND

GFSM2A PAGE 2

PCT MBRS ANSWERING YES FOR 326X1 DAFSC GRPS

PERCENT MEMBERS ANSWERING 'YES' TO CPT ITEMS BY DAFSC
GROUPS IN THE 326X1 CAREER LADDER.

REPORTS ON THE FOLLOWING GROUPS WERE REQUESTED

GROUP IDENTITY ■ SPC022 ALL AMN 326X1	(ALL SHREDS)	CONTAINING	416 MEMBERS.
GROUP IDENTITY ■ SPC023 ALL AMN 32631	(ALL SHREDS)	CONTAINING	63 MEMBERS.
GROUP IDENTITY ■ SPC024 ALL AMN 32651	(ALL SHREDS)	CONTAINING	247 MEMBERS.
GROUP IDENTITY ■ SPC025 ALL AMN 32671	(ALL SHREDS)	CONTAINING	106 MEMBERS.
GROUP IDENTITY ■ SPC026 ALL AMN 326X1C		CONTAINING	70 MEMBERS.
GROUP IDENTITY ■ SPC027 ALL AMN 32631C		CONTAINING	2 MEMBERS.
GROUP IDENTITY ■ SPC028 ALL AMN 32651C		CONTAINING	49 MEMBERS.
GROUP IDENTITY ■ SPC029 ALL AMN 32671C		CONTAINING	19 MEMBERS.

DUTY GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DUTY	SPC 022	SPC 023	SPC 100	SPC 024	SPC 025	SPC 026	SPC 027	SPC 028	SPC 029
A MATHEMATICS, DIRECT CURRENT, VOLTAGE, AND RESISTANCE	100	100	100	96	100	100	100	100	100
B MULTIMETER USES, ALTERNATING CURRENT, INDUCTORS, AND INDUCTIVE CAPACITORS, CAPACITIVE REACTANCE, TRANSFORMERS, AND MAGNETISM	99	100	100	95	97	100	100	89	84
C RCL CIRCUITS, SERIES AND PARALLEL RESONANCE (TIME CONSTANTS), AND FILTERS	87	83	88	88	88	89	100	90	84
D COUPLING, SOLDERING, AND RELAYS	71	67	72	72	80	100	82	74	95
E MICROPHONES, SPEAKERS, AND OSCILLOSCOPES	94	95	95	92	96	100	94	89	84
F SEMICONDUCTOR DIODES, TRANSISTORS, AND TRANSISTOR AMPLIFIERS	95	95	96	92	93	100	94	89	84
G SOLID STATE SPECIAL PURPOSE DEVICES, POWER SUPPLIES, AND OSCILLATORS	81	83	80	82	89	100	90	84	84
H MULTIVIBRATORS, LIMITERS, CLAMPERS, AND ELECTRON TUBES	94	92	95	94	96	100	100	84	84
I ELECTRON TUBE AMPLIFIERS AND CIRCUITS, SPECIAL PURPOSE ELECTRON TUBES, HETERODYMING, MODULATION, AM SYSTEMS, FM SYSTEMS, AND NUMBERING SYSTEMS	51	52	46	63	67	50	67	68	68
J LOGIC FUNCTIONS, BOOLEAN EQUATIONS, AND COUNTERS	70	75	69	68	87	100	94	68	68
K TIMING CIRCUITS, USE OF SIGNAL GENERATORS, MOTORS, AND GENERATORS	55	44	53	65	80	50	84	74	74
L METER MOVEMENTS, SATURABLE REACTORS, MAGNETIC AMPLIFIERS, AND WAVESHAPING CIRCUITS	56	49	53	65	54	100	47	68	89
M SINGLE SIDEBAND SYSTEMS, PULSE MODULATION SYSTEMS, AND ANTENNAS	87	83	89	83	94	100	96	89	89
N TRANSMISSION LINES, WAVEGUIDES AND CAVITY RESONATORS, AND MICROWAVE AMPLIFIERS AND OSCILLATORS	87	90	87	83	90	100	96	74	74
O REGISTERS, STORAGE DEVICES, AND DIGITAL TO ANALOG CONVERTERS	67	65	66	69	87	100	92	74	74
P PHOTONICS, SCHMITT TRIGGERS, AND CABLE FABRICATION	62	67	59	65	39	100	39	32	32
Q INPUT/OUTPUT DEVICES, PHOTO SENSITIVE DEVICES, AND SYNCHRONOUS VIBRATIONS	51	52	47	62	46	100	39	58	58
R INFRARED, LASERS, AND DISPLAY TUBES	63	52	64	67	69	50	71	63	63
S PROGRAMMING, DB AND POWER RATIOS	55	59	53	57	40	0	43	37	37
T	35	43	31	41	4	0	4	0	0
U	71	71	71	71	71	87	100	88	84

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC SPC SPC SPC SPC SPC SPC SPC
022 023 024 025 026 027 028 029

	87	94	89	76	87	100	92	74	
1 A1-01 DO YOU USE AN INSTRUMENT, SUCH AS METER OR AN OSCILLOSCOPE, IN WHICH IT IS NECESSARY TO AMPLIFY OR ORDER OR MAINTENANCE MANUAL, IN WHICH IT IS NECESSARY TO REARRANGE AND SOLVE FORMULAS OR EQUATIONS.	45	43	47	43	36	0	31	53	MATHEMATICS
2 A1-02 DO YOU FIND THE SQUARE ROOT OF A QUANTITY.	35	32	37	32	51	0	57	42	
3 A1-03 DO YOU SOLVE FOR AN UNKNOWN QUANTITY.	8	13	8	6	9	0	8	11	
4 A1-04 DO YOU CONVERT NUMBERS TO LOGARITHMS.	25	27	27	22	27	0	31	21	
5 A1-05 DO YOU CONVERT NUMBERS TO LOGARITHMS.	3	5	2	5	4	0	6	0	
6 A1-06 DO YOU USE LOGARITHM TABLES IN ANY TYPE OF CALCULATIONS.	6	5	5	8	9	0	8	11	
7 A1-07 DO YOU SOLVE QUADRATIC EQUATIONS.	3	5	2	3	3	0	2	5	
8 A1-08 DO YOU USE THE NATURAL SYSTEM OF LOGARITHMS (THIS IS THE LOGARITHM SYSTEM WHICH USES THE NUMBER 2.718 AS ITS BASE).	2	2	2	3	1	0	2	0	
9 A1-09 DO YOU WORK WITH VECTOR QUANTITIES, SUCH AS ADDING OR SUBTRACTING TWO VECTORS.	7	8	7	8	6	0	6	5	EXAMPLE OF A LOW UTILIZATION AREA
10 A1-10 DO YOU WORK WITH TRIGONOMETRIC FUNCTIONS SUCH AS SINE, COSINE, OR TANGENT.	16	13	15	20	11	0	12	11	
11 A1-11 DO YOU DETERMINE AREAS OF PLANE FIGURES, SUCH AS AREAS OF CIRCLES OR TRIANGLES.	2	2	1	3	0	0	0	0	
12 A1-12 DO YOU SOLVE OP USE SIMULTANEOUS EQUATIONS.	5	5	4	6	7	0	8	5	
13 A1-13 DO YOU SOLVE OR USE PROPORTIONS.	18	16	20	14	19	0	22	11	
14 A1-14 DO YOU USE THE TERM VOLTAGE OR VOLT.	98	97	98	97	99	100	100	95	DIRECT CURRENT AND VOLTAGE
15 A2-01 DO YOU USE THE TERM ELECTROMOTIVE FORCE (EMF).	31	32	30	31	37	0	35	47	
16 A2-02 DO YOU USE THE TERM OHM.	96	95	97	96	97	100	98	95	
17 A2-03 DO YOU USE THE TERM DYNE.	9	11	6	13	13	0	8	26	
18 A2-04 DO YOU USE THE TERM AMPERE.	4	5	2	8	4	0	0	16	
19 A2-05 DO YOU USE THE TERM NEUTRON.	87	83	89	85	89	100	94	74	
20 A2-06 DO YOU USE THE TERM COULOMB.	8	10	7	11	11	0	6	26	
21 A2-07 DO YOU USE THE TERM PROTON.	8	10	6	12	13	0	10	21	
22 A2-08 DO YOU WORK WITH RESISTORS IN YOUR PRESENT JOB.	10	11	8	12	14	0	10	26	
23 A3-01 DO YOU INSPECT RESISTORS.	80	75	83	76	79	100	86	58	
24 A3-02 DO YOU CLEAN RESISTORS.	84	78	85	84	87	100	84	89	
25 A3-03 DO YOU ADJUST VALUE OF RESISTORS.	49	37	54	43	67	50	67	68	
26 A3-04 DO YOU CHECK OHMIC VALUE OF RESISTORS.	86	78	88	86	91	100	90	95	RESISTANCE
27 A3-05 DO YOU REMOVE OR REPLACE RESISTORS.	83	75	85	83	87	100	86	89	
28 A3-06 DO YOU REFER TO TEMPERATURE COEFFICIENTS FOR RESISTORS ON ANY TASKS IN YOUR PRESENT JOB.	72	60	74	75	83	100	82	84	
29 A3-07 DO YOU USE OR REFER TO TEMPERATURE COEFFICIENTS FOR RESISTORS ON ANY TASKS IN YOUR PRESENT JOB.	20	16	19	26	24	0	20	37	
30 A3-08 DO YOU IDENTIFY OR CLASSIFY THE RESISTORS YOU WORK WITH AS CARBON, FIXED WIRE, SLIDE TAP, PNEOSTAY OR	77	63	78	83	86	50	84	95	
31 A3-09 DO YOU IDENTIFY OR CLASSIFY THE RESISTORS YOU WORK WITH AS CARBON, FIXED WIRE, SLIDE TAP, PNEOSTAY OR	69	60	69	74	73	100	69	79	EXAMPLE OF A HIGH UTILIZATION AREA

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
59	81-08	DO YOU DIRECTLY USE A QUANTITY OF CHARGE CALLED A COULOMB.	3	4	3	2	3	0	4	0									
60	81-09	DO YOU READ SCHEMATICS.	92	89	95	89	91	50	94	89									
61	82-01	DO YOU USE OR REFER THE TERM EFFECTIVE VOLTAGE (RMS).	75	57	78	80	87	100	88	84									
62	82-02	DO YOU USE OR REFER THE TERM PEAK TO PEAK VOLTAGE.	90	89	92	87	90	100	92	84									
63	82-03	DO YOU USE OR REFER THE TERM AVERAGE VOLTAGE (DC).	76	73	79	71	84	50	88	79									
64	82-04	DO YOU USE OR REFER THE TERM WAVE LENGTH.	68	71	72	55	57	50	63	42									
65	82-05	DO YOU USE OR REFER THE TERM FREQUENCY.	92	90	94	89	94	100	98	99									
66	82-06	DO YOU USE OR REFER THE TERM INSTANTANEOUS VALUE.	32	30	32	32	34	50	33	37									
67	83-01	DO YOU WORK WITH INDUCTORS OR CIRCUITS CONTAINING INDUCTORS, CHOKES, OR CHOKE COILS IN YOUR PRESENT JOB.	62	57	61	69	76	100	78	68									
68	83-02	DO YOU INSPECT INDUCTORS.	52	40	51	60	66	50	65	68									
69	83-03	DO YOU CLEAN INDUCTORS.	28	16	31	28	47	50	49	42									
70	83-04	DO YOU ADJUST INDUCTORS.	35	29	34	42	71	100	65	54									
71	83-05	DO YOU REMOVE OR REPLACE INDUCTORS.	39	29	39	46	61	50	59	68									
72	83-06	DO YOU USE OR REFER TO INDUCTANCE.	40	24	41	49	66	50	61	79									
73	83-07	DO YOU USE OR REFER TO HEATRIES.	29	17	28	41	50	50	43	68									
74	83-08	DO YOU USE OR REFER TO INDUCTIVE REACTANCE.	27	14	24	41	41	50	33	63									
75	83-09	DO YOU USE OR REFER TO COPPER LOSS IN INDUCTORS.	2	0	2	2	6	0	6	5									
76	83-10	DO YOU USE OR REFER TO HYSTERESIS LOSS IN INDUCTORS.	6	5	4	8	10	0	6	21									
77	83-11	DO YOU USE OR REFER TO EDDY CURRENT LOSS IN INDUCTORS.	5	3	5	7	10	0	10	11									
78	83-12	DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTANCE IS PROPORTIONAL TO THE SQUARE OF THE	5	3	5	4	9	0	10	5									
79	83-13	DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE	4	2	4	3	9	0	10	5									
80	83-14	DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS INVERSELY PROPORTIONAL TO	5	6	4	7	10	0	5	16									
81	83-15	DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE	4	3	4	5	10	0	10	11									
82	83-16	DO YOU CALCULATE INDUCTANCE FOR A PARTICULAR INDUCTOR USING FORMULAS.	4	6	4	5	4	0	4	5									
83	83-17	DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES.	7	8	6	8	7	0	10	0									
84	83-18	DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN PARALLEL.	7	10	6	8	7	0	10	0									
85	83-19	DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES-PARALLEL CIRCUITS.	7	6	6	8	7	0	10	0									
86	83-20	DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LAGS VOLTAGE IN AC INDUCTOR CIRCUITS.	18	13	15	26	23	0	16	42									
87	83-21	DO YOU CALCULATE INDUCTIVE REACTANCE.	7	6	5	12	9	0	6	16									

ALTERNATING CURRENT

INDUCTORS AND
INDUCTIVE REACTANCE

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DT-TASK	SPC 022	SPC 023	SPC 024	SPC 025	SPC 026	SPC 027	SPC 028	SPC 029
C 118 C1-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEADS VOLTAGE IN AC CAPACITOR CIRCUITS.	17	11	15	25	26	0	16	53
C 119 C1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITIVE REACTANCE IS INVERSELY PROPORTIONAL TO CAPACITIVE REACTANCE.	13	8	13	18	23	0	18	37
C 120 C1-29 DO YOU CALCULATE CAPACITIVE REACTANCE.	7	6	6	9	9	0	6	16
C 121 C1-30 DO YOU WORK WITH ROTOR-STATOR CAPACITORS (VARIABLE).	35	25	36	38	67	100	67	63
C 122 C1-31 DO YOU WORK WITH COMPRESSION (TRIMMER) CAPACITORS.	27	19	26	35	49	50	45	58
C 123 C1-32 DO YOU WORK WITH ELECTROLYTIC CAPACITORS (FIXED).	57	38	56	70	64	0	65	68
C 124 C1-33 DO YOU WORK WITH PAPER CAPACITORS (FIXED).	46	24	45	63	57	50	53	68
C 125 C1-34 DO YOU WORK WITH MICA CAPACITORS (FIXED).	52	35	51	66	64	50	61	74
C 126 C1-35 DO YOU WORK WITH CERAMIC CAPACITORS (FIXED).	53	33	53	65	66	50	63	74
C 127 C1-36 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF CAPACITORS.	22	24	26	11	19	0	27	16
C 128 C2-01 DO YOU WORK WITH TRANSFORMERS ON YOUR PRESENT JOB.	69	49	72	73	71	50	69	79
C 129 C2-02 DO YOU INSPECT TRANSFORMERS.	62	41	65	65	69	50	67	74
C 130 C2-03 DO YOU CLEAN TRANSFORMERS.	35	19	43	26	47	50	55	26
C 131 C2-04 DO YOU ADJUST TRANSFORMERS.	29	27	28	32	46	50	43	53
C 132 C2-05 DO YOU TROUBLESHOOT TRANSFORMERS.	50	37	51	58	57	50	55	63
C 133 C2-06 DO YOU REMOVE OR REPLACE COMPLETE TRANSFORMERS.	58	44	62	57	64	50	65	63
C 134 C2-07 DO YOU REMOVE OR REPLACE TRANSFORMER PARTS, SUCH AS THE PRIMARY WINDING.	2	5	2	2	1	0	2	0
C 135 C2-08 DO YOU MAKE A DISTINCTION BETWEEN MUTUAL INDUCTANCE AND MUTUAL INDUCTANCE (M).	4	3	4	4	4	0	4	5
C 136 C2-09 DO YOU USE THE SYMBOL FOR MUTUAL INDUCTANCE, M.	2	2	2	3	1	0	2	0
C 137 C2-10 DO YOU REFER TO OR USE THE COEFFICIENT OF COUPLING WHEN WORKING WITH TRANSFORMERS.	5	8	4	6	7	50	4	11
C 138 C2-11 DO YOU CALCULATE TURNS RATIOS FOR TRANSFORMERS USING CURRENT OR VOLTAGE RATIOS.	5	5	4	6	1	0	2	0
C 139 C2-12 DO YOU REFER TO REFLECTED IMPEDANCE WHEN WORKING WITH TRANSFORMERS.	5	5	4	7	7	0	4	16
C 140 C2-13 DO YOU CALCULATE IMPEDANCE INTERACTIONS FOR TRANSFORMERS.	3	3	3	3	1	0	2	0
C 141 C2-14 DO YOU WORK WITH AUTOTRANSFORMERS.	22	22	18	32	21	50	14	37
C 142 C2-15 DO YOU WORK WITH POWER TRANSFORMERS.	56	33	58	66	64	50	63	68
C 143 C2-16 DO YOU WORK WITH AUDIO TRANSFORMERS.	31	16	32	39	56	50	51	68
C 144 C2-17 DO YOU WORK WITH RADIO FREQUENCY TRANSFORMERS.	40	25	40	48	41	50	59	66
C 145 C2-18 DO YOU WORK WITH DON'T REMEMBER WHAT TYPE OF TRANSFORMER.	18	19	21	8	16	0	18	11
C 146 C2-19 DO YOU CHECK TRANSFORMERS FOR OPEN WINDINGS BY MEASURING RESISTANCE.	53	27	54	65	63	50	55	64
C 147 C2-20 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING RESISTANCE.	49	27	51	59	59	50	53	74
C 148 C2-21 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING OUTPUT VOLTAGES.	44	25	45	54	56	50	51	68
C 149 C2-22 DO YOU MEASURE RESISTANCE OF TRANSFORMER WINDINGS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR	12	8	12	12	11	0	12	11

TRANSFORMERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	022	023	024	025	026	027	028	029					
C 150 C2-23 DO YOU MEASURE OUTPUT VOLTAGE OF TRANSFORMERS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN SYMBOLS FOR TRANSFORMERS.	19	13	21	21	29	50	27	32					
C 151 C2-24 DO YOU REFER TO THE BASIC TRANSFORMER SCHEMATIC SYMBOLS FOR TRANSFORMERS.	62	40	66	64	69	50	69	68					
C 152 C2-25 DO YOU REFER TO THE MULTIPLE SECONDARY-WINDINGS SCHEMATIC SYMBOLS FOR TRANSFORMERS.	50	35	49	59	57	50	53	68					
C 153 C2-26 DO YOU REFER TO THE MULTIPLE TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS.	52	35	52	61	59	50	55	66					
C 154 C2-27 DO YOU REFER TO THE CENTER TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS.	56	37	57	64	63	50	61	68					
C 155 C2-28 DO YOU REFER TO THE AIR CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS.	35	25	38	34	46	0	47	47					
C 156 C2-29 DO YOU REFER TO THE IRON CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS.	37	25	40	38	46	0	45	53					
C 157 C2-30 DO YOU REFER TO THE COMBINATIONS OF THE ABOVE SCHEMATIC SYMBOLS FOR TRANSFORMERS.	48	29	52	50	63	0	61	74					
C 158 C2-31 DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING TRANSFORMERS YOU WORK WITH.	22	16	19	32	20	0	20	21					
C 159 C2-32 DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN TRANSFORMERS YOU WORK WITH.	13	13	12	13	17	50	16	16					
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 RATIOS FOR TRANSFORMERS.	11	8	11	13	16	50	14	16					
C 161 C2-34 DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN RATIOS FOR TRANSFORMERS.	17	13	15	25	21	50	16	32					
C 162 C2-35 DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS USING TURNS RATIOS.	5	5	4	6	1	0	2	0					
C 163 C2-36 DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS USING TURNS RATIOS.	3	5	2	3	0	0	0	0					
C 164 C2-37 DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH 3 PHASE TRANSFORMERS.	38	30	35	50	41	50	37	53					
C 165 C2-38 DO YOU INSPECT 3 PHASE TRANSFORMERS.	35	24	35	42	36	50	31	47					
C 166 C2-39 DO YOU CLEAN OR LUBRICATE 3 PHASE TRANSFORMERS.	11	8	12	12	16	0	16	16					
C 167 C2-40 DO YOU ADJUST 3 PHASE TRANSFORMERS.	13	14	12	13	17	50	14	21					
C 168 C2-41 DO YOU TROUBLESHOOT 3 PHASE TRANSFORMERS.	25	14	24	34	26	50	20	37					
C 169 C2-42 DO YOU REMOVE OR REPLACE COMPLETE 3 PHASE TRANSFORMER.	27	21	27	32	27	50	24	32					
C 170 C2-43 DO YOU REMOVE OR REPLACE 3 PHASE TRANSFORMER PARTS, SUCH AS A WINDING.	2	3	0	4	1	0	0	5					
C 171 C3-01 DO YOU USE OR REFER TO PERMANENT MAGNETS.	33	22	36	32	30	0	33	28					
C 172 C3-02 DO YOU USE OR REFER TO TEMPORARY MAGNETS.	20	17	20	22	23	0	18	37					
C 173 C3-03 DO YOU USE OR REFER TO RETENTIVITY OF MAGNETIC MATERIALS.	6	6	6	6	6	0	6	5					
C 174 C3-04 DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC MATERIALS.	5	8	5	3	6	0	4	11					

MAGNETISM

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Dx-TSK

	SPC 022	SPC 023	SPC 024	SPC 025	SPC 026	SPC 027	SPC 028	SPC 029
C 175 C3-05 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS.	6	8	6	5	6	0	4	11
C 176 C3-06 DO YOU USE OR REFER TO RESIDUAL MAGNETISM.	6	5	6	8	13	0	12	16
C 177 C3-07 DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE OR FLUX.	15	17	14	15	17	0	14	26
C 178 C3-08 DO YOU USE OR REFER TO WEBER'S THEORY OF MAGNETISM.	2	2	2	2	1	0	2	0
C 179 C3-09 DO YOU USE OR REFER TO THE DOMAIN THEORY OF MAGNETISM.	2	5	2	2	1	0	2	0
C 180 C3-10 DO YOU USE OR REFER TO MAGNETIC INDUCTION.	13	13	13	14	17	0	18	16
C 181 C3-11 DO YOU USE OR REFER TO FLUX DENSITY.	6	8	7	4	7	0	10	0
C 182 C3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT FOR MAGNETIC POLES, LIKE POLES REPEL AND UNLIKE POLES ATTRACT.	31	27	32	31	41	0	41	47
C 183 C3-13 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE DIRECTION OF MAGNETIC FIELDS ABOUT STRAIGHT WIRES.	13	14	14	9	14	0	16	11
C 184 C3-14 DO YOU USE THE LEFT THUMB RULE TO FIND THE NORTH POLE OF A CURRENT-CARRYING COIL.	9	17	7	9	9	0	8	11
C 185 D1-01 DO YOU WORK WITH RC, LR, OR RCL CIRCUITS ON YOUR PRESENT JOB.	44	37	45	47	54	0	59	47
C 186 D1-02 DO YOU USE OR REFER TO VECTORS WHEN WORKING WITH RCL CIRCUITS.	8	10	6	11	11	0	8	21
C 187 D1-03 DO YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN WORKING WITH RCL CIRCUITS.	4	5	4	6	9	0	6	16
C 188 D1-04 DO YOU USE OR REFER TO SINE WHEN WORKING WITH RCL CIRCUITS.	8	11	6	10	7	0	4	16
C 189 D1-05 DO YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL CIRCUITS.	7	11	5	10	7	0	4	16
C 190 D1-06 DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL CIRCUITS.	7	8	4	11	7	0	4	16
C 191 D1-07 DO YOU USE OR REFER TO WATTS WHEN WORKING WITH RCL CIRCUITS.	26	19	26	31	47	0	47	53
C 192 D1-08 DO YOU USE OR REFER TO TRUE POWER (PT) WHEN WORKING WITH RCL CIRCUITS.	14	13	13	16	29	0	29	32
C 193 D1-09 DO YOU USE OR REFER TO MAXIMUM POWER (PM) WHEN WORKING WITH RCL CIRCUITS.	16	16	16	16	31	0	31	37
C 194 D1-10 DO YOU USE OR REFER TO AVERAGE POWER (PAVE) WHEN WORKING WITH RCL CIRCUITS.	20	19	19	25	37	0	37	42
C 195 D1-11 DO YOU USE OR REFER TO APPARENT POWER (PA) WHEN WORKING WITH RCL CIRCUITS.	13	11	13	14	26	0	24	32
C 196 D1-12 DO YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING WITH RCL CIRCUITS.	9	6	9	8	14	0	14	16
C 197 D1-13 DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN WORKING WITH RCL CIRCUITS.	28	21	28	31	44	0	45	47
C 198 D1-14 DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH RCL CIRCUITS.	34	29	34	36	49	0	51	47
C 199 D1-15 DO YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH RCL CIRCUITS.	30	27	30	32	47	0	49	47

RCL CIRCUITS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DT-TSK	SPC 022	SPC 023	SPC 024	SPC 025	SPC 026	SPC 027	SPC 028	SPC 029
0 200 01-16 DO YOU USE OR REFER TO RESONANT FREQUENCY WHEN WORKING WITH RCL CIRCUITS.	32	22	35	32	46	0	47	47
0 201 01-17 DO YOU USE OR REFER TO HALF POWER POINTS WHEN WORKING WITH RCL CIRCUITS.	23	22	21	29	34	0	31	47
0 202 01-18 DO YOU USE OR REFER TO BANDPASS REGION WHEN WORKING WITH RCL CIRCUITS.	25	22	25	27	40	0	41	42
0 203 01-19 DO YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH RCL CIRCUITS.	14	16	12	18	27	0	22	42
0 204 01-20 DO YOU USE OR REFER TO TANK CIRCUITS WHEN WORKING WITH RCL CIRCUITS.	30	27	28	36	50	0	49	58
0 205 01-21 DO YOU DETERMINE VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS: SINE OF AN ANGLE = OPPOSITE SIDE / HYPOTENUSE, COSINE OF AN ANGLE = ADJACENT SIDE / HYPOTENUSE, TANGENT OF AN ANGLE = OPPOSITE SIDE / ADJACENT SIDE, SECANT OF AN ANGLE = HYPOTENUSE / ADJACENT SIDE, COTANGENT OF AN ANGLE = ADJACENT SIDE / OPPOSITE SIDE, CSCANT OF AN ANGLE = HYPOTENUSE / OPPOSITE SIDE, SECANT OF AN ANGLE = HYPOTENUSE / ADJACENT SIDE, COTANGENT OF AN ANGLE = ADJACENT SIDE / OPPOSITE SIDE.	3	2	2	7	4	0	2	11
0 206 01-22 DO YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS.	4	3	6	0	6	0	8	0
0 207 01-23 DO YOU CALCULATE TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS.	5	10	4	4	4	0	4	5
0 208 01-24 DO YOU CALCULATE PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS.	3	5	2	3	3	0	2	5
0 209 01-25 DO YOU CALCULATE TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS.	4	6	4	2	3	0	4	0
0 210 01-26 DO YOU CALCULATE IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS.	2	6	2	1	1	0	2	0
0 211 01-27 DO YOU CALCULATE APPARENT POWER (PA) FOR SERIES RCL CIRCUITS.	4	6	3	3	4	0	4	5
0 212 01-28 DO YOU CALCULATE TRUE POWER (PT) FOR SERIES RCL CIRCUITS.	4	5	3	4	4	0	4	5
0 213 01-29 DO YOU CALCULATE POWER FACTORS (PF) FOR SERIES RCL CIRCUITS.	4	5	3	6	6	0	4	11
0 214 01-30 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RCL CIRCUITS.	4	3	4	3	6	0	6	5
0 215 01-31 DO YOU CALCULATE IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS.	2	3	2	2	1	0	2	0
0 216 01-32 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING THE ASSUMED VOLTAGE METHOD.	2	2	2	2	1	0	2	0
0 217 01-33 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING OHM'S LAW.	3	3	3	4	4	0	4	5
0 218 01-34 DO YOU CHECK CAPACITORS USING OHMMETERS.	36	21	37	42	53	50	51	58
0 219 01-35 DO YOU CHECK CAPACITORS USING SUBSTITUTION.	22	11	24	24	37	0	37	42
0 220 01-36 DO YOU CHECK INDUCTORS USING OHMMETERS.	32	16	33	41	50	50	47	58
0 221 01-37 DO YOU CHECK INDUCTORS USING SUBSTITUTION.	20	10	22	23	36	0	35	42
0 222 01-38 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE VARIOUS PF, I, AND P ARE RELATED TO THE RESONANT FREQUENCIES FOR RCL CIRCUITS.	2	0	2	4	6	0	4	11
0 223 01-39 DO YOU CALCULATE RESONANT FREQUENCIES FOR RCL CIRCUITS.	5	8	4	6	6	0	2	16
0 224 01-40 DO YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE	11	10	10	13	21	0	18	32

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DT-TSK

	SPC 022	SPC 023	SPC 024	SPC 025	SPC 026	SPC 027	SPC 028	SPC 029	
0 225 01-41 DO YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT	10	11	9	14	19	0	17	37	
0 226 01-42 DO YOU USE OR REFER TO THE GENERAL RULE THAT HALF POWER POINTS ARE AT 70.7 PERCENT OF THE PEAK	22	24	19	27	26	0	20	42	
0 227 01-43 DO YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO Q.	11	10	10	13	19	0	16	26	
0 228 01-44 DO YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE, CAPACITANCE, OR INDUCTANCE WILL AFFECT	7	8	7	6	7	0	6	11	
0 229 02-01 IN YOUR PRESENT JOB, DO YOU WORK WITH, USE, OR REFER TO SERIES OR PARALLEL RESONANCE CIRCUITS OR	25	21	25	27	40	0	39	47	SERIES AND PARALLEL RESONANCE (TIME CONSTANTS)
0 230 02-02 DO YOU WORK WITH, USE, OR REFER TO TIME CONSTANTS.	18	19	17	20	24	0	20	37	
0 231 02-03 DO YOU WORK WITH, USE, OR REFER TO AVAILABLE VOLTAGE.	9	8	9	11	11	0	6	21	
0 232 02-04 DO YOU WORK WITH, USE, OR REFER TO TRANSIENT INTERVALS.	9	10	7	11	10	0	6	21	
0 233 02-05 DO YOU USE OR REFER TO THE GENERAL RULE THAT A CAPACITOR IS FULLY CHARGED (OR DISCHARGED) AFTER FIVE	13	14	12	16	17	0	12	32	
0 234 02-06 DO YOU USE OR REFER TO UNIVERSAL TIME CONSTANT CHARTS.	2	3	2	2	3	0	4	0	
0 235 02-07 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CIRCUIT CURRENT OR COMPONENT VOLTAGES AFTER A	2	5	1	4	1	0	0	5	
0 236 02-08 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE THE TIME REQUIRED FOR CIRCUIT CURRENT OR COMPONENT	4	5	3	6	3	0	0	11	
0 237 02-09 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE COMPONENT VALUES REQUIRED FOR CIRCUIT CURRENT AND	3	3	2	7	4	0	2	11	
0 238 02-10 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT IN LR CIRCUITS REACHES ITS MINIMUM VALUE (OR	7	10	5	9	6	0	0	21	
0 239 03-01 DO YOU WORK WITH CIRCUITS USED AS FILTERS ON YOUR PRESENT JOB.	60	56	62	58	70	50	76	58	
0 240 03-02 DO YOU INSPECT FILTER CIRCUITS.	50	41	51	54	60	0	61	63	
0 241 03-03 DO YOU CLEAN FILTER CIRCUITS.	28	16	32	24	43	0	40	32	
0 242 03-04 DO YOU ALIGN OR ADJUST FILTER CIRCUITS.	30	32	30	28	46	50	49	37	FILTERS
0 243 03-05 DO YOU TROUBLESHOOT TO THE FILTER CIRCUIT.	43	27	45	47	60	50	63	53	
0 244 03-06 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF FILTER CIRCUITS.	32	13	34	40	53	0	55	53	
0 245 03-07 DO YOU REMOVE OR REPLACE THE COMPLETE FILTER CIRCUIT.	49	41	50	51	63	50	65	58	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

BY-TSK

	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	022	023	024	025	026	027	028	029	027	028	029	027	028	029
0 246 D3-06 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF FILTER CIRCUITS.	27	11	29	33	49	0	53	42						
0 247 D3-09 DO YOU WORK ON LOW PASS FILTERS.	38	25	38	44	59	50	59	58						
0 248 D3-10 DO YOU WORK ON HIGH PASS FILTERS.	38	27	39	42	60	50	61	58						
0 249 D3-11 DO YOU WORK ON BANDPASS FILTERS.	42	32	43	45	64	50	67	58						
0 251 D3-13 DO YOU WORK ON DON'T REMEMBER WHICH TYPE OF FILTER	30	21	30	37	49	50	47	53						
0 250 D3-12 DO YOU WORK ON BAND-REJECT FILTERS.	20	24	21	15	16	0	16	16						
0 252 D3-14 DO YOU WORK WITH L-SECTION FILTER CONFIGURATIONS.	21	16	19	29	30	50	24	42						
0 253 D3-15 DO YOU WORK WITH T-SECTION FILTER CONFIGURATIONS.	20	14	18	27	31	0	29	42						
0 254 D3-16 DO YOU WORK WITH PI-SECTION FILTER CONFIGURATIONS.	21	17	17	32	34	50	29	47						
0 255 D3-17 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF FILTER CONFIGURATIONS.	31	30	34	24	39	0	47	21						
0 256 D3-18 ARE PARALLEL RESONANT CIRCUITS USED IN FILTERS YOU WORK WITH.	24	16	22	32	33	50	29	42						
0 257 D3-19 ARE SERIES-PARALLEL CIRCUITS USED IN FILTERS YOU WORK WITH.	25	13	24	36	31	0	29	42						
0 258 D3-20 ARE SERIES RESONANT CIRCUITS USED IN FILTERS YOU WORK WITH.	23	14	21	33	30	50	24	42						
0 259 D3-21 ARE DON'T REMEMBER WHICH TYPE OF BASIC CIRCUIT USED IN FILTERS YOU WORK WITH.	32	30	36	25	39	0	47	21						
0 260 D3-22 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CAPACITANCE OR INDUCTANCE VALUES REQUIRED FOR SPECIFIC JOB.	3	3	2	4	6	0	4	11						
E 261 E1-01 DO YOU WORK WITH COUPLING DEVICES ON YOUR PRESENT JOB.	43	40	43	46	59	0	61	58						
E 262 E1-02 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED	35	25	34	45	49	0	47	56						
E 463 E1-03 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED	33	24	31	42	51	0	51	58						COUPLING
E 264 E1-04 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED	35	21	35	45	54	0	55	58						
E 265 E1-05 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THE RC COUPLING FUNCTIONS.	33	24	32	42	50	0	47	63						
E 266 E1-06 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THE IMPEDANCE COUPLING FUNCTIONS.	31	25	30	39	51	0	51	58						
E 267 E1-07 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THE TRANSFORMER COUPLING FUNCTIONS.	33	21	32	42	54	0	53	63						
E 268 E1-08 DO YOU WORK WITH DIRECTLY COUPLED CIRCUITS.	30	24	28	41	43	0	39	58						
E 269 E1-09 DO YOU WORK WITH CAPACITIVE-RESISTIVE COUPLED CIRCUITS.	30	25	27	41	43	0	39	58						
E 270 E1-10 DO YOU WORK WITH CAPACITIVE-INDUCTIVE COUPLED CIRCUITS.	28	22	26	36	44	0	41	56						
E 271 E1-11 DO YOU WORK WITH TRANSFORMER COUPLED CIRCUITS.	30	22	28	41	47	0	43	63						
E 272 E1-12 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF COUPLING CIRCUIT.	16	17	17	12	23	0	27	16						

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC SPC SPC SPC SPC SPC SPC SPC
022 023 024 025 026 027 028 029

83 89 82 82 81 100 80 84

61 57 60 63 56 50 53 63
77 73 79 74 80 50 80 84
76 76 77 75 74 50 73 79
83 89 84 78 81 100 80 84
75 71 77 75 74 50 73 79
81 84 82 78 81 100 80 84
83 87 83 78 80 100 78 84
64 56 65 69 61 50 55 79
79 81 80 77 79 100 76 84
81 83 82 77 81 100 80 84
75 76 75 73 74 50 73 79
77 78 77 77 79 100 76 84
82 84 81 82 80 100 76 89
70 73 71 67 70 50 65 84
66 49 70 67 73 50 73 74

273 E2-01 ON YOUR PRESENT JOB DO YOU PERFORM SOLDERING TECHNIQUES OR INSPECT OR EVALUATE SOLDERED CONNECTIONS.
274 E2-02 DO YOU SELECT TYPE OF SOLDER TO USE.
275 E2-03 DO YOU ADD FLUX TO CONNECTIONS.
276 E2-04 DO YOU CLEAN CONNECTIONS USING SOLVENTS.
277 E2-05 DO YOU STRIP INSULATION FROM WIRES.
278 E2-06 DO YOU CONNECT OR DISCONNECT HEAT SINKS.
279 E2-07 DO YOU BEND OR SHAPE WIRES OR LEADS.
280 E2-08 DO YOU CUT WIRES.
281 E2-09 DO YOU FILE OR SHAPE SOLDERING IRON TIPS.
282 E2-10 DO YOU TIN SOLDERING IRON TIPS.
283 E2-11 DO YOU CLEAN SOLDERING IRON TIPS.
284 E2-12 DO YOU CLEAN ELECTRICAL SURFACES USING ERASERS.
285 E2-13 DO YOU TIN OR PRE-TIN CONDUCTORS.
286 E2-14 DO YOU INSPECT SOLDERED CONNECTIONS.
287 E2-15 DO YOU DESOLDER CONNECTIONS BY WICKING.
288 E2-16 DO YOU DESOLDER CONNECTIONS USING VACUUM DESOLDERING TOOLS.
289 E2-17 DO YOU CUT COMPONENT LEADS TO REMOVE COMPONENTS.
290 E2-18 DO YOU CRUSH COMPONENTS FOR REMOVAL.
291 E2-19 DO YOU MAKE HARDWIRE CONNECTIONS.
292 E2-20 DO YOU MAKE PRINTED CIRCUIT BOARD CONNECTIONS.
293 E2-21 DO YOU SOLDER PASSIVE COMPONENTS SUCH AS RESISTORS OR CAPACITORS ON PRINTED CIRCUIT BOARDS.
294 E2-22 DO YOU SOLDER ACTIVE COMPONENTS SUCH AS SOLID-STATE DIODES OR TRANSISTORS ON PRINTED CIRCUIT BOARDS.
295 E3-01 DO YOU WORK WITH RELAYS ON YOUR PRESENT JOB.
296 E3-02 DO YOU ADJUST RELAYS.
297 E3-03 DO YOU CLEAN RELAYS.
298 E3-04 DO YOU INSPECT RELAYS.
299 E3-05 DO YOU REMOVE OR REPLACE COMPLETE RELAYS.
300 E3-06 DO YOU REMOVE OR REPLACE PARTS OR RELAYS.
301 E3-07 DO YOU TROUBLESHOOT RELAYS.
302 E3-08 DO YOU STRAIGHTEN RELAY CONTACTS.
303 E3-09 DO YOU PERFORM TASKS ON RELAY CONTACTS.
304 E3-10 DO YOU PERFORM TASKS ON RELAY CORES.
305 E3-11 DO YOU PERFORM TASKS ON RELAY COILS.
306 E3-12 DO YOU PERFORM TASKS ON RELAY ARMATURES.
307 E3-13 DO YOU PERFORM TASKS ON RELAY SPRINGS.
308 E3-14 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY OPEN (NO) SCHEMATIC SYMBOLS FOR RELAYS.
309 E3-15 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY CLOSED (NC) SCHEMATIC SYMBOLS FOR RELAYS.
310 E3-16 DO YOU USE OR REFER TO SINGLE POLE, DOUBLE THROW (SPDT) SCHEMATIC SYMBOLS FOR RELAYS.
311 E3-17 DO YOU USE OR REFER TO DOUBLE POLE, DOUBLE THROW (DPDT) SCHEMATIC SYMBOLS FOR RELAYS.

SOLDERING

RELAYS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC SPC SPC SPC SPC SPC SPC SPC
022 023 024 025 026 027 028 029

DY=TSK

F 312 E3-18 DO YOU USE OR REFER TO OTHER RELAY SYMBOLS SCHEMATIC SYMBOLS FOR RELAYS 55 54 52 62 54 0 51 68

F 313 E3-19 DO YOU CHECK ELECTRICAL CONTINUITY OF COILS BY MEASURING RESISTANCE 51 37 51 62 59 100 51 74

F 314 F1-01 IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS DEALING WITH MICROPHONES 8 2 8 10 30 0 31 32

F 315 F1-02 DO YOU INSPECT MICROPHONES 6 0 6 8 26 0 29 21

F 316 F1-03 DO YOU CLEAN MICROPHONES 5 0 6 8 24 0 27 21

F 317 F1-04 DO YOU OPERATE MICROPHONES 7 2 6 10 29 0 29 32

F 318 F1-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT 4 4 2 4 5 17 0 13 16

F 319 F1-06 DO YOU TROUBLESHOOT DOWN TO MICROPHONE PARTS 2 2 2 3 4 0 4 5

F 320 F1-07 DO YOU REMOVE OR REPLACE COMPLETE MICROPHONES 5 2 4 9 20 0 20 21

F 321 F1-08 DO YOU REMOVE OR REPLACE MICROPHONE PARTS 2 2 1 6 6 0 4 11

F 322 F1-09 DO YOU PERFORM TASKS ON CARBON MICROPHONES 5 2 4 8 20 0 19 26

F 323 F1-10 DO YOU PERFORM TASKS ON CAPACITOR MICROPHONES 1 2 0 3 4 0 2 11

F 324 F1-11 DO YOU PERFORM TASKS ON CRYSTAL MICROPHONES 2 0 2 1 9 0 12 0

F 325 F1-12 DO YOU PERFORM TASKS ON DYNAMIC MICROPHONES 4 2 4 7 17 0 16 21

F 326 F1-13 DO YOU PERFORM TASKS ON VELOCITY RIBBON MICROPHONES WITH SPEAKERS 0 2 0 1 0 0 0 0

F 327 F2-01 IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS DEALING WITH SPEAKERS 6 5 5 9 21 0 22 21

F 328 F2-02 DO YOU INSPECT SPEAKERS 4 0 4 7 14 0 14 11

F 329 F2-03 DO YOU CLEAN SPEAKERS 3 0 4 5 13 0 16 5

F 330 F2-04 DO YOU OPERATE SPEAKERS 6 5 5 9 21 0 22 21

F 331 F2-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT 4 3 4 6 16 0 16 16

F 332 F2-06 DO YOU TROUBLESHOOT DOWN TO SPEAKER PARTS 1 0 1 2 4 0 4 5

F 333 F2-07 DO YOU REMOVE OR REPLACE COMPLETE SPEAKERS 4 3 4 5 16 0 16 16

F 334 F2-08 DO YOU REMOVE OR REPLACE SPEAKER PARTS 0 0 0 2 1 0 0 5

F 335 F2-09 DO YOU PERFORM ANY TASKS ON SPEAKER CONES 0 0 0 1 0 0 0 0

F 336 F2-10 DO YOU PERFORM ANY TASKS ON SPEAKER SPIDERS 0 2 0 1 0 0 0 0

F 337 F2-11 DO YOU PERFORM ANY TASKS ON SPEAKER FIELD COILS 0 0 0 1 0 0 0 0

F 338 F2-12 DO YOU PERFORM ANY TASKS ON SPEAKER VOICE COILS 0 2 0 1 0 0 0 0

F 339 F2-13 DO YOU PERFORM ANY TASKS ON SPEAKER PERMANENT MAGNETS 0 0 0 1 0 0 0 0

F 340 F2-14 DO YOU PERFORM ANY TASKS ON SPEAKER ELECTROMAGNETS 0 0 0 1 0 0 0 0

F 341 F2-15 DO YOU PERFORM ANY TASKS ON SPEAKER SOFT IRON CORES 0 0 0 1 0 0 0 0

F 342 F3-01 DO YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB 93 90 95 89 91 100 92 89

F 343 F3-02 DO YOU USE OSCILLOSCOPES TO PERFORM OPERATIONAL CHECKS 90 81 92 90 93 100 94 89

F 344 F3-03 DO YOU USE OSCILLOSCOPES TO PERFORM ALIGNMENTS OR ADJUSTMENTS 85 81 87 81 90 100 92 84

F 345 F3-04 DO YOU USE OSCILLOSCOPES TO TROUBLESHOOT ELECTRONIC CIRCUITS 85 79 87 83 89 100 90 84

F 346 F3-05 DO YOU USE OSCILLOSCOPES TO MEASURE FREQUENCY 86 83 87 84 81 50 88 68

F 347 F3-06 DO YOU USE OSCILLOSCOPES TO MEASURE TIME 87 81 89 83 81 100 84 74

OSCILLOSCOPES

SPEAKERS

MICROPHONES

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	022	023	024	025	026	027	028	029					
F 348 F3-07 DO YOU USE OSCILLOSCOPES TO OBSERVE LISAJOUS PATTERNS	30	30	28	35	21	0	16	37					
F 349 F3-08 DO YOU USE OSCILLOSCOPES TO OBSERVE SIGNALS WHILE UTILIZING ATTENUATOR PROBES	84	78	87	80	89	100	92	79					
F 350 F3-09 DO YOU USE OSCILLOSCOPES TO MAKE FREQUENCY OR TIME MEASUREMENTS USING DELAY TIME MULTIPLIERS	59	54	59	63	67	100	69	58					
F 351 F3-10 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE	89	87	91	87	89	100	90	84					
F 352 F3-11 DO YOU USE OSCILLOSCOPES TO MEASURE OR OBSERVE SIGNALS AFTER FIRST ADJUSTING THE GAIN AND DC BAL CONTROLS	64	54	64	71	63	0	67	58					
F 353 F3-12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE	89	84	92	86	87	100	90	79					
G 354 G1-01 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT JOB	71	57	72	78	81	0	84	84					
G 355 G1-02 DO YOU INSPECT DIODES	63	44	64	73	74	0	73	84					
G 356 G1-03 DO YOU REMOVE OR REPLACE DIODES	58	41	60	65	71	0	73	74					
G 357 G1-04 DO YOU CHECK DIODES USING AN INSTRUMENT	60	40	60	72	74	0	73	84					
G 358 G1-05 DO YOU USE ENERGY LEVEL DIAGRAMS IN YOUR WORK WITH DIODES	2	0	3	2	6	0	6	5					
G 359 G1-06 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES, TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE, TO DETERMINE THE FORWARD OR REVERSE BIAS RESISTANCE FOR DIODES	3	0	3	3	10	0	10	11					
G 360 G1-07 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR DIODES	11	8	12	12	23	0	24	21					
G 361 G1-08 DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES	39	25	36	52	56	0	53	68					
G 362 G1-09 DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO OTHER ELECTRONIC COMPONENTS, SUCH AS RESISTORS, BASED ON OTHER CHARACTERISTICS	55	40	54	65	69	0	69	74					
G 363 G1-10 DO YOU REFER TO OR DO YOU DETERMINE THE GENERAL EFFECTS OF DOPING ON CURRENT FLOW	6	6	6	6	6	0	6	5					
G 364 G1-11 DO YOU USE OR REFER TO MEASUREMENTS OF FORWARD BIAS RESISTANCE	41	29	41	49	61	0	59	74					
G 365 G1-12 DO YOU USE OR REFER TO DIODE COLOR CODING	22	14	21	31	27	0	27	32					
G 366 G1-13 DO YOU USE OR REFER TO CENTRIFUGAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS	0	0	1	0	1	0	2	0					
G 367 G1-14 DO YOU USE OR REFER TO CENTRIPETAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS	1	0	1	1	3	0	2	5					
G 368 G1-15 DO YOU USE OR REFER TO DIODE NUMBERING SYSTEMS, SUCH AS IN 514	44	24	44	55	56	0	53	68					
G 369 G1-16 DO YOU USE OR REFER TO KINETIC ENERGY OF AN ELECTRON MOVING IN ORBIT	1	2	1	0	1	0	2	0					
G 370 G1-17 DO YOU USE OR REFER TO POTENTIAL ENERGY OF AN ELECTRON MOVING IN ORBIT	1	0	1	1	3	0	2	5					
G 371 G1-18 DO YOU USE OR REFER TO MEASUREMENTS OF REVERSE BIAS RESISTANCE	40	25	40	50	60	0	59	68					
G 372 G1-19 DO YOU USE OR REFER TO NUMBER OF ELECTRONS IN A PARTICULAR SHELL OR ORBIT	1	2	1	1	3	0	2	5					
G 373 G1-20 DO YOU USE OR REFER TO PERMISSIBLE ENERGY LEVELS OF AN ORBITING ELECTRON	0	0	0	0	1	3	0	2					

SEMICONDUCTOR
DIODES

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	022	023	024	025	026	027	028	029											
6 397 GI-44 DO YOU USE OR REFER TO THE ID:1 BACK TO FRONT RESISTANCE RATIO FOR DIODES	44	29	40	59	63	0	59	79											
6 398 GI-45 DO YOU USE OR REFER TO BARRIER HEIGHT IN SEMICONDUCTORS	1	0	1	1	1	0	2	0											
6 399 GI-46 DO YOU USE OR REFER TO DIODE SUBSTITUTION INFORMATION	23	11	21	35	29	0	24	42											
6 400 GI-47 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD CURRENT DIODE RATINGS	9	8	8	14	14	0	12	21											
6 401 GI-48 DO YOU USE OR REFER TO PEAK RECURRENT FORWARD CURRENT DIODE RATINGS	8	6	7	10	13	0	12	16											
6 402 GI-49 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT DIODE RATINGS	10	6	8	15	13	0	12	16											
6 403 GI-50 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE DIODE RATINGS	11	8	9	18	14	0	12	21											
6 404 G2-01 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB.	72	59	72	80	83	50	84	79											
6 405 G2-02 DO YOU INSPECT TRANSISTORS	62	48	63	67	69	0	69	74											
6 406 G2-03 DO YOU REMOVE OR REPLACE TRANSISTORS	59	48	60	63	70	50	71	68											
6 407 G2-04 DO YOU CHECK TRANSISTORS USING AN INSTRUMENT	58	40	60	64	70	50	71	68											
6 408 G2-05 DO YOU USE OR REFER TO EMITTER - BASE (EB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	51	38	51	58	69	50	67	74											
6 409 G2-06 DO YOU USE OR REFER TO COLLECTOR - BASE (CB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	51	33	52	58	70	50	69	74											
6 410 G2-07 DO YOU USE OR REFER TO EMITTER - COLLECTOR (EC) RESISTANCE MEASUREMENTS	50	33	52	58	70	50	69	74											
6 411 G2-08 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE EMITTER - BASE JUNCTION	12	11	12	10	17	0	20	11											
6 412 G2-09 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE COLLECTOR - BASE JUNCTION	11	11	12	9	19	0	22	11											
6 413 G2-10 DO YOU USE OR REFER TO THE PHYSICAL SIZE OF THE TRANSISTOR STRUCTURE (COLLECTOR, BASE AND EMITTER) IN A TRANSISTOR	22	21	20	27	30	0	31	32											
6 414 G2-11 DO YOU USE OR REFER TO LEAKAGE CURRENT (ICBO) IN A TRANSISTOR	9	11	8	11	13	0	12	16											
6 415 G2-12 DO YOU USE OR REFER TO TRANSISTOR SCHEMATIC SYMBOLS	68	59	69	72	77	50	82	66											
6 416 G2-13 DO YOU USE OR REFER TO TRANSISTOR NOTATION SUCH AS Q1, Q2, Q3, ETC	67	59	68	71	77	50	80	74											
6 417 G2-14 DO YOU USE OR REFER TO TRANSISTOR SUBSTITUTION INFORMATION	29	21	30	33	34	0	35	37											
6 418 G2-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE TRANSISTOR BASE CURRENT IS NORMALLY SIGNIFICANTLY	18	16	18	19	26	0	27	26											
6 419 G2-16 DO YOU USE THE INFORMATION THAT THE EFFECT OF EMITTER BASE VOLTAGE ON BASE CURRENT IS THE CONTROLLING FACTOR FOR	27	27	27	29	34	0	35	37											
6 420 G2-17 DO YOU USE THE GENERAL RULE THAT LEAKAGE CURRENT (ICBO) IN A TRANSISTOR INCREASES AS TEMPERATURE INCREASES	14	14	12	19	19	0	16	26											
6 421 G2-18 DO YOU USE OR REFER TO TRANSISTOR CHARACTERISTIC CURVES	6	6	5	8	9	0	8	11											

TRANSISTORS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

QY-TSK	SPC 022	SPC 023	SPC 024	SPC 025	SPC 026	SPC 027	SPC 028	SPC 029
6 422 G2-19 DO YOU USE OR REFER TO BETA TRANSISTOR GAINS	5	5	4	6	3	0	2	5
6 423 G2-20 DO YOU USE OR REFER TO ALPHA TRANSISTOR GAINS	5	5	4	8	1	0	2	0
6 424 G2-21 DO YOU USE OR REFER TO GAMMA TRANSISTOR GAINS	4	5	4	6	1	0	2	0
6 425 G2-22 DO YOU CALCULATE BETA TRANSISTOR GAINS	1	0	0	4	0	0	0	0
6 426 G2-23 DO YOU CALCULATE ALPHA TRANSISTOR GAINS	1	0	0	3	0	0	0	0
6 427 G2-24 DO YOU CALCULATE GAMMA TRANSISTOR GAINS	1	0	0	2	0	0	0	0
6 428 G3-01 DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR PRESENT JOB	57	48	54	68	70	50	69	74
6 429 G3-02 DO YOU INSPECT TRANSISTOR AMPLIFIERS	46	38	43	59	59	0	55	74
6 430 G3-03 DO YOU ALIGN OR ADJUST TRANSISTOR AMPLIFIERS	43	37	41	51	59	50	59	58
6 431 G3-04 DO YOU TROUBLESHOOT TO THE AMPLIFIER CIRCUIT LEVEL	42	32	41	52	60	50	57	68
6 432 G3-05 DO YOU TROUBLESHOOT TO AMPLIFIER COMPONENTS	32	22	32	41	54	0	53	63
6 433 G3-06 DO YOU REMOVE OR REPLACE THE COMPLETE AMPLIFIER	48	44	44	58	59	50	57	63
6 434 G3-07 DO YOU REMOVE OR REPLACE AMPLIFIER COMPONENTS	31	22	30	37	50	0	49	58
6 435 G3-08 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A CHANGE IN BASE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN	17	16	17	17	30	0	37	16
6 436 G3-09 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN	6	6	6	6	10	0	12	5
6 437 G3-10 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A CHANGE IN BASE	16	13	17	16	29	0	37	11
6 438 G3-11 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN	6	6	5	7	7	0	8	5
6 439 G3-12 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN BASE CURRENT WHICH RESULTS FROM AN INPUT SIGNAL	14	13	15	14	27	0	31	21
6 440 G3-13 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN	5	5	4	8	6	0	6	5
6 441 G3-14 DO YOU USE THE LOAD-LINE METHOD OF ANALYSIS IN YOUR CIRCUIT ANALYSIS (THIS METHOD REQUIRES YOU TO PLOT A QUIESCENT POINT) FOR A TRANSISTOR	1	3	1	1	3	0	4	0
6 442 G3-15 DO YOU USE OR REFER TO THE OPERATING POINT OF A PARTICULAR TRANSISTOR	8	8	7	10	14	0	14	16
6 443 G3-16 DO YOU CALCULATE THE SPECIFIC QUIESCENT POINT FOR A PARTICULAR TRANSISTOR	2	5	2	2	3	0	4	0
6 444 G3-17 DO YOU MEASURE VOLTAGE GAIN USED IN THE COMMON EMITTER CONFIGURATION	22	11	21	30	41	0	43	42
6 445 G3-18 DO YOU MEASURE CURRENT GAIN USED IN THE COMMON EMITTER CONFIGURATION	15	10	15	18	29	0	29	32
6 446 G3-19 DO YOU MEASURE POWER GAIN USED IN THE COMMON EMITTER CONFIGURATION	15	8	15	19	30	0	31	32
6 447 G3-20 DO YOU CALCULATE THE VOLTAGE GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS DO YOU DIVIDE THE CHANGE	2	2	2	3	6	0	6	5

TRANSISTOR
AMPLIFIERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC SPC SPC SPC SPC SPC SPC SPC
022 023 024 025 026 027 028 029

6 466 G3-39 DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS 25 21 25 28 40 50 41 37

6 467 G3-40 DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS 18 16 17 22 31 0 33 32

6 468 G3-41 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF PHASE DISTORTION 14 10 14 17 29 0 31 26

6 469 G3-42 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF FREQUENCY DISTORTION 20 13 20 23 36 0 41 26

6 470 G3-43 DO YOU NEED TO KNOW THE DEGENERATIVE EFFECTS ON THE CIRCUIT CAUSED BY CHANGING EMITTER RESISTANCE FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS 9 8 9 10 16 0 18 11

6 471 G3-44 DO YOU DETERMINE THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS 13 13 12 16 20 0 20 21

6 472 G3-45 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS 14 14 11 23 20 0 20 21

6 473 G3-46 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS 29 17 27 39 44 0 45 47

6 474 G3-47 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY AMPLIFIERS 15 11 13 21 17 0 12 32

6 475 G3-48 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS 19 13 17 26 31 0 31 37

6 476 G3-49 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS 25 16 23 37 43 0 41 53

6 477 H1-01 DO YOU USE OR REFER TO VARACTORS 16 11 14 25 24 0 14 53

6 478 H1-02 DO YOU USE OR REFER TO TUNNEL DIODES 34 25 33 51 33 0 29 47

6 479 H1-03 DO YOU USE OR REFER TO FIELD EFFECT TRANSISTORS (FET) 44 33 44 49 54 50 57 47

6 480 H1-04 DO YOU USE OR REFER TO UNI-JUNCTION TRANSISTORS 43 33 42 51 59 50 61 53

6 481 H1-05 DO YOU USE OR REFER TO ZENER DIODES 70 59 69 79 84 50 86 84

6 482 H1-06 DO YOU USE OR REFER TO INTEGRATED CIRCUITS 82 73 83 88 84 50 90 78

6 483 H2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH POWER SUPPLIES 81 84 82 78 86 100 92 68

6 484 H2-02 DO YOU INSPECT POWER SUPPLIES 73 70 72 72 75 67 74 63

6 485 H2-03 DO YOU CLEAN POWER SUPPLIES 52 25 57 56 67 50 73 53

6 486 H2-04 DO YOU ALIGN OR ADJUST POWER SUPPLIES 75 73 77 74 80 100 84 68

6 487 H2-05 DO YOU TROUBLESHOOT TO POWER SUPPLY CIRCUIT LEVEL 68 63 70 65 77 100 82 63

6 488 H2-06 DO YOU TROUBLESHOOT TO POWER SUPPLY COMPONENTS 44 24 47 48 59 0 61 58

6 489 H2-07 DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES 77 79 76 77 76 100 80 63

6 490 H2-08 DO YOU REMOVE OR REPLACE POWER SUPPLY COMPONENTS 41 25 43 45 56 0 61 47

6 491 H2-09 DO YOU WORK WITH HALF-WAVE RECTIFIERS 48 41 48 53 57 0 57 63

6 492 H2-10 DO YOU WORK WITH FULL-WAVE RECTIFIERS OTHER THAN BRIDGE RECTIFIERS 50 46 50 53 56 0 59 53

6 493 H2-11 DO YOU WORK WITH BRIDGE RECTIFIERS 53 51 52 56 56 0 57 58

6 494 H2-12 DO YOU WORK WITH THREE-PHASE RECTIFIERS 37 30 38 40 40 0 39 47

6 495 H2-13 DO YOU USE OR REFER TO INPUT VOLTAGE 64 63 65 61 73 0 60 63

6 496 H2-14 DO YOU USE OR REFER TO INPUT FREQUENCY 49 54 49 45 56 0 59 53

6 497 H2-15 DO YOU USE OR REFER TO PEAK OUTPUT VOLTAGE 54 56 56 48 57 0 65 42

6 498 H2-16 DO YOU USE OR REFER TO AVERAGE OUTPUT VOLTAGE 51 46 53 49 60 0 67 47

6 499 H2-17 DO YOU USE OR REFER TO RIPPLE AMPLITUDE 45 41 42 56 43 0 41 53

6 500 H2-18 DO YOU USE OR REFER TO RIPPLE FREQUENCY 35 30 32 43 39 0 37 47

SOLID-STATE
SPECIAL PURPOSE
DEVICES

POWER SUPPLIES

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC SPC SPC SPC SPC SPC SPC SPC
022 023 024 025 026 027 028 029

DY-TSK

4 501	H2-19	DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE	23	19	23	25	31	0	33	32
4 502	H2-20	DO YOU USE OR REFER TO SHAPE OF OUTPUT WAVEFORMS	57	57	60	51	61	0	69	47
4 503	H2-21	DO YOU USE OR REFER TO EFFECTIVE OUTPUT VOLTAGE	51	49	51	54	61	50	65	53
4 504	H2-22	DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE FILTERS	46	33	47	52	50	0	51	53
4 505	H2-23	DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE FILTERS	43	30	44	48	49	0	51	47
4 506	H2-24	DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE INPUT L-TYPE FILTERS	37	29	36	43	37	0	37	42
4 507	H2-25	DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE INPUT L-TYPE FILTERS	35	27	34	41	37	0	37	42
4 508	H2-26	DO YOU WORK WITH CIRCUITS WHICH EMPLOY LC PI-TYPE FILTERS	35	21	36	42	36	0	35	42
4 509	H2-27	DO YOU WORK WITH CIRCUITS WHICH EMPLOY RC PI-TYPE FILTERS	35	22	35	42	37	0	37	42
4 510	H2-28	DO YOU WORK WITH CIRCUITS WHICH EMPLOY DON'T REMEMBER WHICH TYPE OF FILTER	38	44	41	25	43	50	51	21
4 511	H2-29	DO YOU HAVE THE OPTION OF REPLACING ONE TYPE OF FILTER WITH A DIFFERENT TYPE FILTER	2	0	2	2	4	0	4	5
4 512	H3-01	DO YOU WORK WITH OSCILLATORS IN YOUR PRESENT JOB	54	51	51	60	66	100	65	63
4 513	H3-02	DO YOU INSPECT OSCILLATORS	44	35	42	53	54	0	55	58
4 514	H3-03	DO YOU ALIGN OR ADJUST OSCILLATORS	44	44	40	54	60	100	57	63
4 515	H3-04	DO YOU REMOVE OR REPLACE COMPLETE OSCILLATORS	45	46	42	52	54	100	53	53
4 516	H3-05	DO YOU REMOVE OR REPLACE OSCILLATOR COMPONENTS	18	11	18	23	41	0	39	53
4 517	H3-06	DO YOU TROUBLESHOOT TO OSCILLATOR CIRCUIT LEVEL	42	35	40	50	54	100	51	58
4 518	H3-07	DO YOU TROUBLESHOOT TO OSCILLATOR COMPONENTS	19	10	18	26	40	0	35	58
4 519	H3-08	DO YOU USE OR REFER TO FEEDBACK	33	27	32	41	49	0	47	58
4 520	H3-09	DO YOU USE OR REFER TO FREQUENCY DETERMINING DEVICES (FDD)	30	27	26	40	40	0	37	53
4 521	H3-10	DO YOU USE OR REFER TO AMPLITUDE STABILITY	30	25	30	32	43	0	47	37
4 522	H3-11	DO YOU USE OR REFER TO FREQUENCY STABILITY	36	32	33	44	51	50	51	53
4 523	H3-12	DO YOU USE OR REFER TO DAMPING	22	19	19	30	34	0	31	47
4 524	H3-13	DO YOU USE OR REFER TO REGENERATIVE FEEDBACK	27	22	24	35	43	0	41	53
4 525	H3-14	DO YOU USE OR REFER TO PIEZOELECTRIC EFFECT	10	13	9	12	20	0	16	32
4 526	H3-15	DO YOU USE OR REFER TO CRITICAL DAMPING	9	11	8	10	14	0	14	16
4 527	H3-16	DO YOU USE OR REFER TO OVER DAMPING	9	11	7	14	13	0	12	16
4 528	H3-17	DO YOU USE OR REFER TO UNDER DAMPING	10	11	7	15	13	0	12	16
4 529	H3-18	DO YOU WORK WITH OSCILLATORS WHICH USE LC TANK CIRCUITS AS FDD	26	19	26	30	40	0	39	47
4 530	H3-19	DO YOU WORK WITH OSCILLATORS WHICH USE RC NETWORKS AS FDD	30	22	30	35	47	0	47	53
4 531	H3-20	DO YOU WORK WITH OSCILLATORS WHICH USE CRYSTALS AS FDD	32	22	32	40	50	50	49	53
4 532	H3-21	DO YOU WORK WITH OSCILLATORS WHICH USE DON'T REMEMBER WHICH TYPE OF FDD	17	21	16	14	19	50	20	11
4 533	H3-22	DO YOU WORK WITH SERIES HARTLEY SINUSOIDAL OSCILLATORS	17	19	14	23	29	0	22	47

OSCILLATORS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
022	023	024	025	026	027	028	029	029	029	029	029	029	029
534	H3-23	DO YOU WORK WITH SHUNT HARTLEY SINUSOIDAL OSCILLATORS	17	19	13	25	26	0	18	47			
535	H3-24	DO YOU WORK WITH COLPITTS SINUSOIDAL OSCILLATORS	19	16	17	25	33	50	29	42			
536	H3-25	DO YOU WORK WITH CLAPP SINUSOIDAL OSCILLATORS	8	6	7	11	17	0	12	32			
537	H3-26	DO YOU WORK WITH BUTLER SINUSOIDAL OSCILLATORS	26	24	28	23	29	50	31	21			
538	H3-27	DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF OSCILLATORS											
539	I1-01	DO YOU WORK WITH MULTIVIBRATORS IN YOUR PRESENT JOB	38	46	32	47	39	50	37	42			
540	I1-02	DO YOU INSPECT HAVE GENERATING OR SHAPING CIRCUITS	29	32	24	39	27	0	22	42			
541	I1-03	DO YOU ALIGN OR ADJUST HAVE GENERATING OR SHAPING CIRCUITS	29	29	25	38	30	50	24	42			
542	I1-04	DO YOU CALIBRATE HAVE GENERATING OR SHAPING CIRCUITS	21	17	18	32	24	0	20	37			MULTIVIBRATORS
543	I1-05	DO YOU TROUBLESHOOT TO HAVE GENERATING OR SHAPING CIRCUITS	27	27	23	39	29	0	22	47			
544	I1-06	DO YOU TROUBLESHOOT TO HAVE GENERATING OR SHAPING CIRCUIT COMPONENTS	17	13	16	22	26	0	22	37			
545	I1-07	DO YOU REMOVE OR REPLACE COMPLETE HAVE GENERATING OR SHAPING CIRCUITS	29	38	24	35	29	50	27	42			
546	I1-08	DO YOU REMOVE OR REPLACE HAVE GENERATING OR SHAPING COMPONENTS	14	8	13	18	24	0	20	37			
547	I1-09	DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK CIRCUITS	16	13	15	25	21	50	14	37			
548	I1-10	DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN RC NETWORKS	20	17	17	27	20	0	18	26			
549	I1-11	DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN CRYSTALS	18	13	17	25	21	0	18	32			
550	I1-12	DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN DON'T REMEMBER WHICH TYPE OF FDD	16	25	15	15	11	0	12	11			
551	I1-13	DO YOU WORK WITH ASTABLE MULTIVIBRATORS	22	22	18	32	23	50	16	37			
552	I1-14	DO YOU WORK WITH MONOSTABLE MULTIVIBRATORS	24	19	19	37	29	0	22	47			
553	I1-15	DO YOU WORK WITH BISTABLE MULTIVIBRATORS	24	22	19	38	29	0	22	47			
554	I1-16	DO YOU WORK WITH DON'T REMEMBER WHICH TYPE MULTIVIBRATORS	13	21	15	6	11	0	16	0			
555	I2-01	DO YOU WORK WITH LIMITERS OR CLAMPERS IN YOUR PRESENT JOB	31	29	26	43	46	0	43	58			
556	I2-02	DO YOU WORK WITH SERIES DIODE LIMITERS	18	10	15	30	23	0	20	32			
557	I2-03	DO YOU WORK WITH SHUNT DIODE LIMITERS	16	10	13	27	26	0	22	37			LIMITERS AND CLAMPERS
558	I2-04	DO YOU WORK WITH LIMITERS WITH BIAS	15	10	13	23	29	0	27	37			
559	I2-05	DO YOU WORK WITH ZENER DIODE LIMITERS	21	11	18	32	30	0	27	42			
560	I2-06	DO YOU WORK WITH TRANSISTOR LIMITERS	17	10	15	27	26	0	22	37			
561	I2-07	DO YOU WORK WITH DON'T KNOW WHICH TYPE OF LIMITERS	14	21	11	15	17	0	16	21			
562	I2-08	DO YOU WORK WITH BASIC DIODE CLAMPING CIRCUITS	16	6	13	28	21	0	16	37			
563	I2-09	DO YOU WORK WITH DIODE CLAMPING CIRCUITS WITH BIAS	14	6	11	25	24	0	20	37			
564	I2-10	DO YOU WORK WITH DON'T KNOW WHICH TYPE OF CLAMPING CIRCUIT	16	19	14	19	23	0	22	26			
565	I3-01	IN YOUR PRESENT JOB, DO YOU WORK ON EQUIPMENT WHICH CONTAINS ELECTRON TUBES	25	21	24	31	56	0	57	58			
566	I3-02	DO YOU CHECK ELECTRON TUBES TO SEE IF THEY ARE GOOD	20	14	21	21	41	0	47	32			ELECTRON TUBES

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task Description	SPC 022	SPC 023	SPC 024	SPC 025	SPC 026	SPC 027	SPC 028	SPC 029
1 598 13-34 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER GAIN EFFICIENCY	10	10	11	8	30	0	37	16
1 599 13-35 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER GAIN	6	8	6	4	16	0	20	5
1 600 13-36 DO YOU USE TEST TUBE CHECKERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	5	5	4	7	13	0	14	11
1 601 13-37 DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	8	8	8	9	20	0	24	11
1 602 13-38 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	12	10	11	15	29	0	33	21
1 603 13-39 DO YOU USE CHARACTERISTIC CURVES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	3	3	3	2	10	0	12	5
1 604 13-40 DO YOU CALCULATE ANY ELECTRON TUBE CAPACITANCES SUCH AS INPUT CAPACITANCE	0	0	1	0	1	0	2	0
1 605 13-41 DO YOU USE OR REFER TO TUBE SOCKET NOTATION	14	6	13	22	31	0	29	42
1 606 13-42 DO YOU USE OR REFER TO PIN NUMBERING SYSTEMS	18	11	17	23	37	0	35	47
1 607 13-43 DO YOU USE OR REFER TO THE TYPE OF MATERIAL OR THE OPERATING TEMPERATURE OF THE EMITTING SURFACE IN THE TUBE	2	2	2	1	4	0	4	0
1 608 13-44 DO YOU USE OR REFER TO TUBE SUBSTITUTION MATERIAL SUCH AS MANUALS OR CHARTS	6	3	4	10	11	0	8	21
J 609 J1-01 DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS IN YOUR PRESENT JOB	17	11	17	22	49	0	47	58
J 610 J1-02 DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER	2	2	2	3	7	0	8	5
J 611 J1-03 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	3	3	2	7	11	0	10	16
J 612 J1-04 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	6	5	5	10	21	0	18	32
J 613 J1-05 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	5	3	4	9	17	0	14	26
J 614 J1-06 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	6	3	6	10	24	0	20	37
J 615 J1-07 DO YOU TROUBLESHOOT OR REPAIR DON'T KNOW WHICH TYPE OF AMPLIFIER	8	8	8	8	23	0	24	21
J 616 J2-01 DO YOU WORK WITH GAS TUBES (HOT CATHODE OR COLD CATHODE)	9	5	8	13	21	0	18	32
J 617 J2-02 DO YOU WORK WITH CATHODE-RAY TUBES	28	30	26	30	26	0	27	26
J 618 J2-03 DO YOU USE OR REFER TO THE CHARACTERISTICS OF BEAM POWER TUBES	4	6	4	2	6	0	6	5
J 619 J2-04 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH BEAM POWER TUBES ARE USED	6	5	5	7	9	0	6	16
J 620 J2-05 DO YOU USE OR REFER TO THE CHARACTERISTICS OF THYRATONS	2	2	2	4	3	0	0	11
J 621 J2-06 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH THYRATONS ARE USED	3	3	2	6	4	0	2	11
J 622 J2-07 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTRON GUNS OF CATHODE-RAY TUBES (CRT)	15	16	13	19	10	0	10	11
J 623 J2-08 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROMAGNETIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES	14	13	13	17	9	0	8	11

SPECIAL PURPOSE
ELECTRON TUBES

ELECTRON TUBE
AMPLIFIERS
AND CIRCUITS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DI-TSK	SPC 022	SPC 023	SPC 024	SPC 025	SPC 026	SPC 027	SPC 028	SPC 029
J 624 J2-09 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES	10	3	9	15	7	0	6	11
J 625 J2-10 DO YOU USE OR REFER TO PHOSPHOR SCREENS	17	17	15	19	9	0	8	11
J 626 J2-11 DO YOU USE OR REFER TO AQUADAG COATINGS	10	13	8	14	4	0	2	11
J 627 J2-12 DO YOU USE OR REFER TO ELECTRON OPTICS	8	11	6	8	3	0	2	5
J 628 J2-13 DO YOU USE OR REFER TO PERSISTENCE	11	6	10	17	7	0	4	16
J 629 J2-14 DO YOU USE OR REFER TO DECAY TIMES	11	16	10	10	3	0	2	5
J 630 J2-15 DO YOU USE OR REFER TO FLUORESCENCE	9	10	8	9	3	0	2	5
J 631 J2-16 DO YOU USE OR REFER TO PHOSPHORESCENCE	9	11	9	9	3	0	2	5
J 632 J3-01 DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	63	63	62	64	83	100	88	66
J 633 J3-02 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	41	35	43	38	69	50	78	47
J 634 J3-03 DO YOU PERFORM TASKS ON FREQUENCY MIXERS	44	38	45	45	71	50	80	53
J 635 J3-04 DO YOU USE OR REFER TO THE HETERODYNING OF SIGNALS IN YOUR WORK WITH TRANSMIT OR RECEIVE SYSTEMS	30	25	31	32	53	0	55	53
J 636 J3-05 DO YOU PERFORM TASKS ON REACTANCE MODULATORS	18	16	18	17	23	0	24	21
J 637 J3-06 DO YOU PERFORM TASKS ON MODULATED OSCILLATORS	33	37	32	33	47	0	49	47
K 638 KI-01 DO YOU WORK ON AM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	26	17	25	32	69	0	71	66
K 639 KI-02 DO YOU INSPECT AM TRANSMIT OR RECEIVE SYSTEMS	23	16	21	29	59	0	59	63
K 640 KI-03 DO YOU CLEAN AM TRANSMIT OR RECEIVE SYSTEMS	19	11	17	27	53	0	55	53
K 641 KI-04 DO YOU ALIGN OR ADJUST AM TRANSMIT OR RECEIVE SYSTEMS	23	16	21	30	63	0	63	68
K 642 KI-05 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE SYSTEMS	21	16	19	28	59	0	59	63
K 643 KI-06 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE COMPONENTS	19	11	17	26	56	0	55	63
K 644 KI-07 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE SYSTEMS	20	14	20	25	56	0	61	47
K 645 KI-08 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE COMPONENTS	18	10	17	25	54	0	55	58
K 646 KI-09 DO YOU PERFORM TASKS ON RF OSCILLATORS	19	10	19	25	51	0	55	47
K 647 KI-10 DO YOU PERFORM TASKS ON RF AMPLIFIERS	20	11	19	28	60	0	61	63
K 648 KI-11 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	18	8	17	25	60	0	61	63
K 649 KI-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS	20	11	19	28	60	0	61	63
K 650 KI-13 DO YOU PERFORM TASKS ON LOCAL OSCILLATORS	19	10	19	24	56	0	59	53
K 651 KI-14 DO YOU PERFORM TASKS ON IF AMPLIFIERS	20	10	20	26	60	0	61	63
K 652 KI-15 DO YOU PERFORM TASKS ON DETECTORS	20	13	19	26	53	0	55	53
K 653 KI-16 DO YOU PERFORM TASKS ON DON'T REMEMBER WHICH AM STAGE TRANSMITTERS	6	6	6	7	13	0	16	5
K 654 KI-17 DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN TRANSMITTERS	12	8	11	17	33	0	35	32
K 655 KI-18 DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN TRANSMITTERS	16	11	14	23	41	0	43	42
K 656 KI-19 DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS	23	14	22	29	64	0	65	68
K 657 KI-20 DO YOU USE OR REFER TO SELECTIVITY OF RECEIVERS	20	13	19	25	57	0	61	53
K 658 KI-21 DO YOU USE OR REFER TO 2ND HARMONIC DISTORTION	9	2	7	16	27	0	24	37
K 659 KI-22 DO YOU USE OR REFER TO BANDPASS DISTORTION	11	3	11	15	36	0	35	42
K 660 KI-23 DO YOU USE OR REFER TO SQUARE LAW DISTORTION	2	0	1	5	7	0	2	21

HETERODYNING,
MODULATION, AND
DEMODULATION

AM SYSTEMS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

BY-TSK	8	8	8	9	4	4	4	5	5
	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	022	023	024	025	026	027	028	029	029
L 694 K3-10 DO YOU ADD OCTAL NUMBERS TO GET A SUM	8	8	8	9	4	0	4	5	5
L 695 L1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO LOGIC FUNCTIONS	41	37	39	47	36	50	33	42	42
L 696 L1-02 DO YOU CONSTRUCT TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES	16	13	17	15	10	0	12	5	5
L 697 L1-03 DO YOU CONSTRUCT TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES	16	13	17	15	10	0	12	5	5
L 698 L1-04 DO YOU CONSTRUCT TRUTH TABLES FOR AND OR LOGIC SYMBOLS WITH STATE INDICATORS	16	13	17	15	10	0	17	5	5
L 699 L1-05 DO YOU CONSTRUCT TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS OR GATES	15	13	16	15	9	0	10	5	5
L 700 L1-06 DO YOU USE OR REFER TO TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES	26	25	26	28	20	0	18	26	26
L 701 K1-07 DO YOU USE OR REFER TO TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES	26	27	26	27	20	0	18	26	26
L 702 K1-08 DO YOU USE OR REFER TO TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS	25	24	25	27	20	0	14	26	26
L 703 L1-09 DO YOU USE OR REFER TO TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS	25	29	24	25	19	0	18	21	21
L 704 L1-10 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR AND GATES	38	35	38	41	33	50	33	32	32
L 705 L1-11 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR OR GATES	38	35	38	41	33	50	33	32	32
L 706 L1-12 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR NAND OR NOR GATES	38	35	38	40	33	50	33	32	32
L 707 L1-13 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR EXCLUSIVE OR GATES	36	35	36	38	29	50	29	26	26
L 708 L2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO BOOLEAN EQUATIONS, LOGIC DIAGRAMS, OR LOGIC TRANSISTOR LOGIC (DCTL) CIRCUITS	11	6	11	15	13	0	10	21	21
L 709 L2-02 DO YOU DRAW LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUITS	6	2	7	5	6	0	8	0	0
L 710 L2-03 DO YOU CONSTRUCT TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS	3	3	4	3	3	0	4	0	0
L 711 L2-04 DO YOU DRAW LOGIC DIAGRAMS FROM GIVEN BOOLEAN EQUATIONS	6	13	6	4	3	0	4	0	0
L 712 L2-05 DO YOU MEASURE INPUTS OR OUTPUTS OF LOGIC GATES	21	16	22	24	21	0	22	21	21
L 713 L2-06 DO YOU DEVELOP OR ANALYZE BOOLEAN EQUATIONS IN THE PROCESS OF TROUBLESHOOTING DIGITAL CIRCUITS	9	11	9	9	6	0	8	0	0
L 714 L2-07 DO YOU ANALYZE LOGIC CIRCUITS BY USING BOOLEAN ALGEBRA	12	16	9	14	7	0	8	5	5
L 715 L2-08 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUIT GATES	13	8	12	12	19	0	14	21	21
L 716 L2-09 DO YOU USE OR REFER TO TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS	7	6	5	10	7	0	4	16	16
L 717 L2-10 DO YOU USE OR REFER TO LOGIC DIAGRAMS CONSISTING OF MORE THAN ONE GATE	25	22	23	29	27	50	29	21	21
L 718 L2-11 DO YOU COMPUTE SUM AND CARRY EXPRESSIONS FOR SERIAL HALF OR FULL ADDER LOGIC DIAGRAMS	6	8	4	8	6	0	6	5	5

BOOLEAN EQUATIONS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	022	023	024	025	026	027	028	029											
L 719 L2-12 DO YOU TRACE DATA FLOW THROUGH PARALLEL FULL ADDER LOGIC DIAGRAMS	11	11	11	13	13	0	10	21											
L 720 L2-13 DO YOU WORK WITH INSTABLE (FREE RUNNING) MULTIVIBRATORS	20	19	19	22	21	0	22	21											
L 721 L2-14 DO YOU WORK WITH BISTABLE (FLIP-FLOP) MULTIVIBRATORS	24	25	23	25	26	0	29	21											
L 722 L2-15 DO YOU WORK WITH MONOSTABLE (ONE-SHOT) MULTIVIBRATORS	22	19	22	25	26	0	29	21											
L 723 L2-16 DO YOU USE OR REFER TO FLIP-FLOP MULTIVIBRATOR SYMBOLS	22	22	21	25	20	0	22	16											
L 724 L2-17 DO YOU USE OR REFER TO SINGLE-SHOT MULTIVIBRATOR SYMBOLS	21	19	21	24	20	0	22	16											
L 725 L2-18 DO YOU USE OR REFER TO FLIP-FLOP CIRCUIT DIAGRAMS	21	17	21	25	21	0	22	21											
L 726 L2-19 DO YOU USE OR REFER TO FLIP-FLOP TRUTH TABLES	14	16	13	15	13	0	14	11											
L 727 L2-20 DO YOU USE OR REFER TO COMPLEMENTED FLIP-FLOP LOGIC SYMBOLS	13	14	12	15	13	0	12	16											
L 728 L2-21 DO YOU USE OR REFER TO COMPLEMENTED FLIP-FLOP LOGIC SYMBOLS	13	14	12	17	13	0	12	16											
L 729 L2-22 DO YOU MEASURE OUTPUT WAVESHAPES OF LOGIC CIRCUITS	23	22	21	26	23	50	22	21											
L 730 L2-23 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTED FLIP-FLOP SCHEMATIC DIAGRAMS	16	19	14	17	14	0	14	16											
L 731 L2-24 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTING FLIP-FLOP SCHEMATIC DIAGRAMS	15	19	13	18	14	0	14	16											
L 732 L2-25 DO YOU CONSTRUCT TRUTH TABLES FOR J-K FLIP-FLOP LOGIC SYMBOLS	5	6	5	4	7	0	8	5											
L 733 L3-01 DO YOU WORK WITH DIGITAL COUNTERS IN YOUR PRESENT JOB	36	33	33	46	41	100	31	63											
L 734 L3-02 DO YOU USE OR REFER TO UP-COUNTERS	29	24	24	38	27	100	20	37											
L 735 L3-03 DO YOU USE OR REFER TO DOWN-COUNTERS	26	19	24	34	20	0	18	32											
L 736 L3-04 DO YOU USE OR REFER TO SERIAL COUNTERS	18	17	16	24	14	50	14	11											
L 737 L3-05 DO YOU USE OR REFER TO PARALLEL COUNTERS	17	13	15	24	10	0	10	11											
L 738 L3-06 DO YOU USE OR REFER TO RING COUNTERS	7	6	7	7	4	0	4	5											
L 739 L3-07 DO YOU USE OR REFER TO DECADE COUNTERS	17	14	17	19	11	0	10	16											
L 740 L3-08 DO YOU USE OR REFER TO COUNT DETECT CIRCUITS	18	17	15	25	13	50	16	16											
L 741 L3-09 DO YOU USE OR REFER TO DOWN CLOCKS	21	17	19	27	20	50	16	26											
L 742 L3-10 DO YOU USE OR REFER TO UP CLOCKS	22	22	20	26	20	50	18	21											
L 743 L3-11 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	14	13	13	18	16	50	10	26											
L 744 L3-12 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-FLOPS	12	11	10	16	13	0	10	21											
L 745 L3-13 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF DECADE COUNTERS	12	8	11	17	10	0	6	21											
L 746 L3-14 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF RING COUNTERS	5	3	5	4	3	0	2	5											
L 747 L3-15 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER	12	10	10	18	10	0	6	21											
L 748 L3-16 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	15	10	13	25	14	0	12	21											

COUNTERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DIY-TSK	SPC 022	SPC 023	SPC 024	SPC 025	SPC 026	SPC 027	SPC 028	SPC 029
L 749 L3-17 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF COUNTERS	14	8	12	22	14	0	12	26
L 750 L3-18 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	9	11	8	10	9	0	6	16
L 751 L3-19 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	6	6	5	9	4	0	2	11
L 752 L3-20 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE	8	8	6	11	6	0	4	11
L 753 L3-21 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR OTHER TYPES OF COUNTERS	2	3	3	1	1	0	2	0
L 754 L3-22 DO YOU CONSTRUCT TRUTH TABLES FROM LOGIC DIAGRAMS OF DECADE COUNTERS	4	2	4	3	3	0	4	0
L 755 L3-23 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP IN RING COUNTERS FOR SPECIFIC INPUT PULSES	9	8	8	12	11	0	8	21
L 756 L3-24 DO YOU DETERMINE THE APPROPRIATE AND GATE NECESSARY IN COUNT DETECT CIRCUITS TO INDICATE A REQUIRED COUNT	50	51	50	49	53	0	57	42
M 757 M1-01 DO YOU WORK WITH SAWTOOTH WAVE GENERATORS	24	24	26	22	26	0	29	21
M 758 M1-02 DO YOU WORK WITH TRAPEZOIDAL WAVE GENERATORS	31	32	31	28	39	0	41	37
M 759 M1-03 DO YOU WORK WITH PULSED OSCILLATORS WITH REGENERATIVE FEEDBACK	25	24	28	20	26	0	27	26
M 760 M1-04 DO YOU WORK WITH PULSED OSCILLATORS WITHOUT REGENERATIVE FEEDBACK	32	35	32	30	43	0	47	37
M 761 M1-05 DO YOU WORK WITH BLOCKING OSCILLATORS	72	65	75	68	64	50	69	53
M 762 M1-06 DO YOU USE OR REFER TO RISE TIME	64	57	70	57	57	50	61	47
M 763 M1-07 DO YOU USE OR REFER TO FALL OR FLYBACK TIME	69	67	70	66	54	0	57	53
M 764 M1-08 DO YOU USE OR REFER TO SWEEP TIME	46	44	45	51	33	0	33	37
M 765 M1-09 DO YOU USE OR REFER TO ELECTRICAL LENGTH OF SAWTOOTH WAVIFORMS	47	46	47	46	37	0	43	26
M 766 M1-10 DO YOU USE OR REFER TO PHYSICAL LENGTH OF SAWTOOTH WAVIFORMS	38	35	36	47	27	0	27	32
M 767 M1-11 DO YOU USE OR REFER TO LINEAR SLOPE OF SAWTOOTH WAVIFORMS	38	35	38	38	34	0	35	37
M 768 M1-12 DO YOU USE OR REFER TO GATE LENGTH OF SAWTOOTH WAVIFORMS	57	60	57	57	84	100	86	79
M 769 M2-01 DO YOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB	48	54	44	53	71	100	69	74
M 770 M2-02 DO YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL GENERATORS	25	32	23	27	40	0	41	42
M 771 M2-03 DO YOU PERFORM PERIODIC MAINTENANCE SUCH AS ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL GENERATORS	30	37	28	33	39	50	39	37
M 772 M2-04 DO YOU TROUBLESHOOT TO AN ASSEMBLY OR SUBASSEMBLY WHILE USING SIGNAL GENERATORS	13	6	13	15	24	0	22	32
M 773 M2-05 DO YOU TROUBLESHOOT TO THE SMALLEST REPLACEABLE COMPONENT WHILE USING SIGNAL GENERATORS	29	24	29	33	66	50	67	63
M 774 M2-06 DO YOU USE AUDIO SINE-WAVE GENERATORS								

TIMING CIRCUITS

USE OF SIGNAL GENERATORS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC SPC SPC SPC SPC SPC SPC SPC
022 023 024 025 026 027 028 029

01-TSK

M 775 M3-07	DO YOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH AS SQUARE WAVE, TRIANGLE, PULSE, OR SPIKE	30	32	28	32	46	100	43	47
M 776 M2-08	DO YOU USE RF GENERATORS LESS THAN 1,000 MH	30	24	32	30	66	50	67	63
M 777 M2-09	DO YOU USE RF GENERATORS GREATER THAN 1,000 MH	44	48	43	42	59	100	61	47
M 778 M2-10	DO YOU USE OTHER SPECIAL PURPOSE OR MULTI-FUNCTION GENERATORS	41	38	40	42	57	50	57	58
M 779 M3-01	IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS OR WITH TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS	31	21	31	36	46	0	49	42
M 780 M3-02	DO YOU INSPECT MOTORS	27	16	27	34	40	0	43	37
M 781 M3-03	DO YOU CLEAN OR LUBRICATE MOTORS	18	10	18	21	34	0	39	26
M 782 M3-04	DO YOU OPLKATE MOTORS	25	19	24	32	39	0	41	37
M 783 M3-05	DO YOU REMOVE OR REPLACE COMPLETE MOTORS	25	16	26	29	39	0	43	32
M 784 M3-06	DO YOU REMOVE OR REPLACE MOTOR PARTS	6	5	6	6	19	0	20	16
M 785 M3-07	DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF MOTORS	27	17	27	32	40	0	43	37
M 786 M3-08	DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS	4	3	5	3	16	0	18	11
M 787 M3-09	DO YOU PERFORM ANY TASKS ON FIELD COILS	3	2	3	4	10	0	10	11
M 788 M3-10	DO YOU PERFORM ANY TASKS ON ARMATURES	4	2	4	4	13	0	16	5
M 789 M3-11	DO YOU PERFORM ANY TASKS ON ROTORS	3	2	3	4	10	0	12	5
M 790 M3-12	DO YOU PERFORM ANY TASKS ON BRUSHES	5	3	5	8	17	0	20	11
M 791 M3-13	DO YOU PERFORM ANY TASKS ON SLIP RINGS	3	2	3	6	10	0	12	5
M 792 M3-14	DO YOU PERFORM ANY TASKS ON COMPUTATORS	3	2	4	4	11	0	14	5
M 793 M3-15	DO YOU PERFORM ANY TASKS ON POLE PIECES	3	2	3	3	11	0	14	5
M 794 M3-16	DO YOU DETERMINE OR MEASURE THE MAGNITUDE OF THE FORCE OR TORQUE CREATED BY A MOTOR	5	5	3	8	4	0	6	0
M 795 M3-17	DO YOU DETERMINE OR MEASURE THE DIRECTION OF THE MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR	7	8	6	9	11	0	14	5
M 796 M3-18	DO YOU DETERMINE OR MEASURE THE MAGNITUDE OR DIRECTION OF THE INDUCED VOLTAGE IN MOTORS	4	5	3	6	7	0	10	0
M 797 M3-19	DO YOU WORK WITH SYNCHRONOUS MOTORS	18	8	17	25	19	0	18	21
M 798 M3-20	DO YOU WORK WITH INDUCTION MOTORS	15	8	15	20	27	0	29	26
M 799 M3-21	DO YOU WORK WITH SPLIT-PHASE MOTORS	12	5	13	16	17	0	16	21
M 800 M3-22	DO YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS	19	13	20	21	31	0	35	26
M 801 M3-23	DO YOU INSPECT GENERATORS	11	10	11	14	11	0	12	11
M 802 M3-24	DO YOU CLEAN OR LUBRICATE GENERATORS	6	3	6	7	7	0	8	5
M 803 M3-25	DO YOU OPERATE GENERATORS	12	11	9	18	13	0	14	11
M 804 M3-26	DO YOU REMOVE OR REPLACE COMPLETE GENERATORS	6	8	6	8	6	0	6	5
M 805 M3-27	DO YOU REMOVE OR REPLACE GENERATOR PARTS	1	2	1	0	3	0	4	0
M 806 M3-28	DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF GENERATORS	7	6	6	9	7	0	6	11
M 807 M3-29	DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF GENERATORS	1	2	2	0	3	0	4	0
M 808 M1-01	DO YOU WORK WITH METERS IN YOUR PRESENT JOB	79	78	81	75	86	100	90	74
M 809 M1-02	DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF PERMANENT MAGNETS	13	10	15	11	17	0	16	21
M 810 M1-03	DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF MOVING COILS	15	10	16	14	17	0	16	21

METER MOVEMENTS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DA-TSK	SPC 022	SPC 023	SPC 024	SPC 025	SPC 026	SPC 027	SPC 028	SPC 029
N 811 NI-04 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF SPIRAL SPRINGS	14	6	16	13	17	0	16	21
N 812 NI-05 DO YOU READ METER SCALES	80	79	82	77	87	100	92	74
N 813 NI-06 DO YOU EXTEND THE RANGE OF AMMETERS	31	38	32	26	49	0	51	47
N 814 NI-07 DO YOU ZERO OHMMETERS	80	81	81	75	87	100	92	74
N 815 NI-08 DO YOU ZERO AMMETERS	44	40	43	48	70	50	73	63
N 816 NI-09 DO YOU EXTEND THE RANGE OF VOLTMETERS	52	59	51	49	64	50	69	53
N 817 NI-10 DO YOU USE OR REFER TO VOLTMETER SENSITIVITY EXPRESSED IN UNITS OF OHMS PER VOLT	44	33	41	57	54	0	57	53
N 818 VZ-01 DO YOU WORK WITH SATURABLE REACTORS OR MAGNETIC AMPLIFIERS IN YOUR PRESENT JOB	8	5	6	14	17	0	8	42
N 819 VZ-02 DO YOU INSPECT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	6	5	4	10	13	0	6	32
N 820 VZ-03 DO YOU CLEAN MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	4	5	3	5	6	0	4	11
N 821 VZ-04 DO YOU ADJUST MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	4	3	3	6	9	0	4	21
N 822 VZ-05 DO YOU TROUBLESHOOT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	4	0	4	6	10	0	6	21
N 823 VZ-06 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	4	2	4	7	10	0	6	21
N 824 VZ-07 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIER OR SATURABLE REACTOR COMPONENTS	1	0	1	1	3	0	2	5
N 825 VZ-08 DO YOU USE OR REFER TO HYSTERESIS CURVES OR LOOPS	1	2	1	0	0	0	0	0
N 826 VZ-09 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE REACTORS	2	2	2	2	3	0	2	5
N 827 VZ-10 DO YOU MEASURE OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE REACTORS	2	2	2	3	3	0	4	0
N 828 VZ-11 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS FOR MAGNETIC AMPLIFIERS	3	3	3	4	9	0	4	11
N 829 VZ-12 DO YOU USE OR REFER TO COERCIVE FORCE IN SATURABLE REACTORS	0	0	1	0	0	0	0	0
N 830 VZ-13 DO YOU USE OR REFER TO RESIDUAL MAGNETISM IN SATURABLE REACTORS	0	0	1	0	0	0	0	0
N 831 VZ-14 DO YOU USE OR REFER TO FLUX DENSITY IN SATURABLE REACTORS	0	0	1	0	0	0	0	0
N 832 VZ-15 DO YOU USE OR REFER TO POINT OF SATURATION IN SATURABLE REACTORS	1	2	1	1	1	0	0	0
N 833 VZ-16 DO YOU USE OR REFER TO SATURABLE REACTOR SCHEMATIC SYMBOLS	3	2	2	7	9	0	4	21
N 834 VZ-01 DO YOU WORK WITH WAVESHAPING CIRCUITS IN YOUR PRESENT JOB	57	63	56	56	53	50	59	37
N 835 VZ-02 DO YOU USE OR REFER TO TRANSIENT INTERVALS	24	24	23	26	21	0	20	26
N 836 VZ-03 DO YOU USE OR REFER TO PULSE WIDTH (PW)	56	56	57	56	54	50	59	42
N 837 VZ-04 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)	50	46	53	47	46	0	53	42

WAVESHAPING
CIRCUITS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

0	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
0	022	023	024	025	026	027	028	029	029	030	031	032	032	032	032	032	032	032	032
0 873 01-29 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB TRANSMITTER SCHEMATIC DIAGRAMS	11	3	12	14	50	0	51	53											
0 874 01-30 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB RECEIVER SCHEMATIC DIAGRAMS	11	3	12	14	50	0	51	53											
0 875 02-01 DO YOU WORK ON PULSE MODULATION SYSTEMS IN YOUR PRESENT JOB	33	38	32	32	33	0	35	32											
0 876 02-02 DO YOU INSPECT PULSE MODULATION SYSTEMS	29	30	29	27	30	0	31	32											
0 877 02-03 DO YOU CLEAN PULSE MODULATION SYSTEMS	19	19	21	14	19	0	27	11											
0 878 02-04 DO YOU ALIGN PULSE MODULATION SYSTEMS	27	32	26	25	29	0	29	32											
0 879 02-05 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS	27	25	28	25	26	0	27	26											
0 880 02-06 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEM COMPONENTS	19	14	19	21	24	0	27	32											
0 881 02-07 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS	24	25	26	20	20	0	24	11											
0 882 02-08 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEM COMPONENTS	16	14	16	15	20	0	20	21											
0 883 02-09 DO YOU WORK ON PULSE-AMPLITUDE MODULATION (PAM) SYSTEMS	20	17	20	20	17	0	16	21											
0 884 02-10 DO YOU WORK ON PULSE-DURATION MODULATION (PDM) SYSTEMS	16	14	17	16	16	0	14	21											
0 885 02-11 DO YOU WORK ON PULSE-POSITION MODULATION (PPM) SYSTEMS	14	14	14	14	17	0	16	21											
0 886 02-12 DO YOU WORK ON PULSE-CODE MODULATION (PCM) SYSTEMS	10	10	11	9	20	0	18	26											
0 887 02-13 DO YOU WORK ON LINE PULSING MODULATION SYSTEMS	7	6	7	6	9	0	10	5											
0 888 02-14 DO YOU WORK ON DON'T REMEMBER WHICH TYPE OF MODULATION SYSTEM	13	22	13	10	11	0	14	5											
0 889 02-15 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER SUPPLIES	24	25	24	22	24	0	24	26											
0 890 02-16 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM CHARGING CHOKES AND CHARGING DIODES	8	8	9	6	13	0	12	16											
0 891 02-17 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE FORMING NETWORKS	21	24	21	21	26	0	24	32											
0 892 02-18 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TIMERS	19	19	19	18	24	0	27	32											
0 893 02-19 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM SWITCHES SUCH AS GAS THYRATONS	4	5	3	5	4	0	2	11											
0 894 02-20 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE TRANSFORMERS	14	8	15	15	19	0	16	26											
0 895 02-21 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TRANSMITTER TUBES	19	19	19	18	21	0	20	26											
0 896 02-22 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM RF AMPLIFIERS	23	27	22	25	24	0	24	26											
0 897 02-23 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM FREQUENCY CONVERTERS	16	22	19	15	23	0	24	21											
0 898 02-24 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM IF AMPLIFIERS	21	19	21	21	24	0	24	26											
0 899 02-25 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DETECTORS	23	21	22	25	23	0	22	26											

PULSE MODULATION SYSTEMS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

0	900	02-26	DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM VIDEO AMPLIFIERS	22	22	22	24	21	0	20	26
0	901	02-27	DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER VIDEO AMPLIFIERS	16	14	17	15	19	0	16	26
0	902	02-28	DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DON'T REMEMBER WHICH PULSE MODULATION SYSTEM STAGES	9	11	9	7	7	0	6	11
0	903	02-29	DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)	28	29	28	30	27	0	29	26
0	904	02-30	DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)	26	27	26	26	26	0	27	26
0	905	02-31	DO YOU USE OR REFER TO PULSE WIDTH (PW)	31	35	30	31	30	0	33	26
0	906	02-32	DO YOU USE OR REFER TO PULSE SHAPE	31	35	30	30	31	0	35	26
0	907	02-33	DO YOU USE OR REFER TO PEAK POWER	27	33	26	25	27	0	29	26
0	908	02-34	DO YOU USE OR REFER TO AVERAGE POWER	21	25	19	24	23	0	22	26
0	909	02-35	DO YOU CALCULATE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)	16	22	16	12	14	0	18	5
0	910	02-36	DO YOU MEASURE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)	27	25	26	31	27	0	29	26
0	911	02-37	DO YOU USE FORMULAS TO CALCULATE AVERAGE POWER OR PEAK POWER OF PULSE MODULATION TRANSMIT SYSTEMS	8	11	9	4	16	0	14	16
0	912	02-38	DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION TRANSMITTER SCHEMATIC DIAGRAMS	24	27	22	26	29	0	31	26
0	913	02-39	DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION RECEIVER SCHEMATIC DIAGRAMS	25	29	23	28	30	0	31	32
0	914	03-01	DO YOU WORK WITH ANTENNAS IN YOUR PRESENT JOB	46	48	45	49	40	100	39	37
0	915	03-02	DO YOU INSPECT ANTENNAS	43	43	40	50	33	100	29	37
0	916	03-03	DO YOU CLEAN ANTENNAS	38	35	37	40	29	100	27	26
0	917	03-04	DO YOU PHYSICALLY ALIGN ANTENNAS	21	21	22	19	27	100	24	26
0	918	03-05	DO YOU ELECTRICALLY ALIGN ANTENNAS	31	25	30	36	30	100	27	32
0	919	03-06	DO YOU TROUBLESHOOT TO ANTENNAS	33	30	32	38	24	100	22	21
0	920	03-07	DO YOU TROUBLESHOOT TO ANTENNA COMPONENTS	31	27	30	33	30	100	29	26
0	921	03-08	DO YOU REMOVE OR INSTALL ANTENNAS	25	19	26	28	11	0	12	11
0	922	03-09	DO YOU REMOVE OR REPLACE COMPONENTS OF ANTENNAS	30	27	29	33	29	100	29	21
0	923	03-10	DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF E OR ELECTRIC FIELD LINES	2	2	3	1	0	0	0	0
0	924	03-11	DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF H OR MAGNETIC FIELD LINES	2	2	3	0	0	0	0	0
0	925	03-12	DO YOU DETERMINE THE DIRECTION OF THE MAGNETIC LINES IN RELATION TO THE ELECTRIC LINES OF FORCE FOR ANTENNAS	2	0	3	0	0	0	0	0
0	926	03-13	DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE OF CORRECT LENGTH (HALF-WAVE) ACT AS	2	0	2	3	0	0	0	0
0	927	03-14	DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE LONGER THAN A HALF-WAVE ACT AS INDUCTIVE LOADS	2	0	2	2	0	0	0	0
0	928	03-15	DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE SHORTER THAN A HALF-WAVE ACT AS CAPACITIVE LOADS	2	2	2	1	0	0	0	0

ANTENNAS

PCT MEMS ANSWRING YES FOR 326X1 DAF5C GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC SPC SPC SPC SPC SPC
022 023 024 025 026 027 028 029

0Y-TSK

0 929 03-16 DO YOU WORK WITH HERTZ ANTENNAS	6	8	7	5	6	0	8	0
0 930 03-17 DO YOU WORK WITH MARCONI ANTENNAS	2	0	2	4	0	0	0	0
0 931 03-18 DO YOU WORK WITH BROADSIDE ARRAYS	3	3	4	2	4	50	4	0
0 932 03-19 DO YOU WORK WITH END-FIRE ARRAYS	7	3	3	3	1	0	0	5
0 933 03-20 DO YOU WORK WITH CARBONOID ARRAYS	7	3	6	11	10	0	10	11
0 934 03-21 DO YOU WORK WITH COLLINER ARRAYS	5	6	5	6	3	0	2	5
0 935 03-22 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC INDUCTION FIELDS WHEN WORKING WITH ANTENNAS	2	0	3	2	1	0	0	5
0 936 03-23 DO YOU MEASURE ELECTROMAGNETIC INDUCTION FIELDS OF ANTENNAS	2	2	2	2	1	0	0	5
0 937 03-24 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC RADIATION FIELDS WHEN WORKING WITH ANTENNAS	4	2	5	2	6	0	6	5
0 938 03-25 DO YOU MEASURE ELECTROMAGNETIC RADIATION FIELDS OF ANTENNAS	1	0	2	1	1	0	0	5
0 939 03-26 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA RADIATION	2	0	2	1	1	0	0	5
0 940 03-27 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA INDUCTION FIELD	1	2	1	0	0	0	0	0
0 941 03-28 ARE ANY OF THE ANTENNAS YOU WORK ON LINEARLY POLARIZED	14	10	15	13	9	0	10	5
0 942 03-29 ARE ANY OF THE ANTENNAS YOU WORK ON CIRCULARLY POLARIZED	14	6	14	19	4	0	4	5
0 943 03-30 DO YOU MEASURE OR DETERMINE THE POLARITY OF ANTENNAS YOU WORK ON	6	0	5	5	3	0	4	0
0 944 03-31 DO YOU CONSTRUCT, OR MAKE THE CALCULATIONS NECESSARY TO CONSTRUCT, ANTENNAS OF CORRECT LENGTH FOR ELEMENTS	1	2	1	0	0	0	0	0
0 945 03-32 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS	5	3	6	4	7	0	10	0
0 946 03-33 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS DIRECTORS	4	0	6	4	9	0	10	5
0 947 03-34 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS REFLECTORS	6	3	6	6	10	50	10	5
0 948 03-35 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN ONLY ONE KIND OF ELEMENTS	22	27	21	19	11	0	12	11
0 949 03-36 DO YOU WORK ON UNIDIRECTIONAL ANTENNAS	19	11	17	22	17	50	16	16
0 950 03-37 DO YOU WORK ON BIDIRECTIONAL ANTENNAS	12	8	13	9	13	50	16	0
0 951 03-38 DO YOU WORK ON DONUT RESEMBLING THE DIRECTIONALITY	17	24	17	14	17	0	14	21
0 952 03-39 DO YOU WORK WITH ROTARY ANTENNA ARRAYS	8	5	8	10	14	0	14	16
0 953 03-40 DO YOU WORK WITH TRANSMISSION LINES IN YOUR PRESENT JOB DO YOU WORK WITH TRANSMISSION LINES IN TRANSMISSION LINES ARE DEFINED TO INCLUDE LEADS	13	22	11	11	3	0	2	5
0 954 03-41 DO YOU REFER TO OR USE COPPER LOSS OR IZR LOSS IN TRANSMISSION LINES	1	0	0	2	0	0	0	0
0 955 03-42 DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY CURRENTS IN TRANSMISSION LINES	3	5	3	3	0	0	0	0

TRANSMISSION
LINES

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task ID	Description	SPC 022	SPC 023	SPC 024	SPC 025	SPC 026	SPC 027	SPC 028	SPC 029
P 956	PI-04 DO YOU REFER TO OR USE RADIATION LOSS IN TRANSMISSION LINES	5	6	4	7	1	0	0	5
P 957	PI-05 DO YOU USE OR REFER TO DIELECTRIC LOSS IN TRANSMISSION LINES	2	2	1	3	0	0	0	0
P 958	PI-06 DO YOU USE OR REFER TO LEAKAGE LOSSES IN TRANSMISSION LINES	5	8	4	6	0	0	0	0
P 959	PI-07 DO YOU WORK WITH TWISTED PAIR TRANSMISSION LINES	3	3	2	3	0	0	0	0
P 960	PI-08 DO YOU WORK WITH TWIN LEAD TRANSMISSION LINES	3	6	2	2	0	0	0	0
P 961	PI-09 DO YOU WORK WITH OPEN WIRE TRANSMISSION LINES	1	2	1	2	0	0	0	0
P 962	PI-10 DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION LINES	12	16	10	12	4	0	2	11
P 963	PI-11 DO YOU WORK WITH RIGID COAXIAL CABLE TRANSMISSION LINES	10	14	9	8	3	0	2	5
P 964	PI-12 DO YOU TROUBLESHOOT TRANSMISSION LINES	9	16	8	7	1	0	2	0
P 965	PI-13 DO YOU ANALYZE VOLTAGE OR CURRENT WAVEFORMS IN TRANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION	2	3	2	0	1	0	2	0
P 966	PI-14 DO YOU SELECT APPROPRIATE TRANSMISSION LINES TERMINATIONS TO ACHIEVE DESIRED WAVEFORMS	2	2	2	1	0	0	0	0
P 967	PI-15 DO YOU USE OR REFER TO SCHEMATIC SYMBOLS FOR LINE TERMINATIONS IN TERMS OF CIRCUIT TERMINATIONS	6	11	4	7	3	0	2	5
P 968	PI-16 DO YOU MEASURE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES	3	2	3	6	4	0	4	5
P 969	PI-17 DO YOU CALCULATE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES	2	2	2	3	4	0	4	5
P 970	PI-18 DO YOU PERFORM THE CALCULATIONS NECESSARY TO DETERMINE THE IMPEDANCE AND LENGTH OF QUARTER - WAVELENGTH	0	0	0	1	1	0	2	0
P 971	PI-19 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING MATCHING TRANSFORMERS	4	5	4	5	3	0	2	5
P 972	PI-20 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING DELTA MATCHING	2	0	2	2	1	0	2	0
P 973	PI-21 DO YOU SELECT THE TYPE OF TRANSMISSION LINE NEEDED FOR PARTICULAR JOBS WITHOUT REFERRING TO TECHNICAL DATA	0	0	1	0	0	0	0	0
P 974	PI-22 DO YOU USE OR REFER TO THE TERM CHARACTERISTIC IMPEDANCE (Z0) OF TRANSMISSION LINES	2	3	2	2	3	0	2	5
P 975	PI-23 DO YOU CALCULATE THE CHARACTERISTIC IMPEDANCE (Z0) OF TRANSMISSION LINES	0	0	0	0	0	0	0	0
P 976	PI-24 DO YOU USE OR REFER TO THE TERM CUTOFF FREQUENCY OF TRANSMISSION LINES	1	2	1	0	0	0	0	0
P 977	PI-25 DO YOU USE OR REFER TO THE TERM VELOCITY FACTOR (K) OF TRANSMISSION LINES	0	0	0	0	1	0	2	0
P 978	PI-26 DO YOU COMPUTE THE ELECTRICAL LENGTH OF TRANSMISSION LINES FOR PARTICULAR FREQUENCIES	1	0	1	1	0	0	0	0
P 979	PI-27 DO YOU CONSTRUCT TRANSMISSION LINES OF PARTICULAR ELECTRICAL LENGTH FOR GIVEN FREQUENCIES	0	0	0	0	2	0	0	0
P 980	PI-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT AS THE FREQUENCY INCREASES AND THE PHYSICAL LENGTH OF	1	2	2	0	0	0	0	0

PCT HBNS ANSWRNG YES FOR 326X1 DAFSC GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY=TSK

SPC SPC SPC SPC SPC SPC SPC SPC SPC SPC
022 023 024 025 026 027 028 029

15 14 15 16 4 0 4 5

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

CIRCUITRY

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

MODULATION

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

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

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

P1043 P3-10 DO YOU WORK WITH REFLEX KLYSTRONS

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

P1045 P3-12 DO YOU WORK WITH NONDEGENERATIVE PARAMETRIC

AMPLIFIERS

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

P1047 P3-14 DO YOU WORK WITH MAGNETRONS

P1048 P3-15 DO YOU INSPECT KLYSTRONS OR TWT

P1049 P3-16 DO YOU CLEAN KLYSTRONS OR TWT

P1050 P3-17 DO YOU TUNE KLYSTRONS OR TWT ELECTRICALLY

P1051 P3-18 DO YOU TUNE KLYSTRONS OR TWT MECHANICALLY

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

TWT

P1053 P3-20 DO YOU TROUBLESHOOT KLYSTRONS OR TWT

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

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

P1056 P3-23 DO YOU INSPECT PARAMETRIC AMPLIFIERS

P1057 P3-24 DO YOU CLEAN PARAMETRIC AMPLIFIERS

P1058 P3-25 DO YOU ADJUST PARAMETRIC AMPLIFIERS

P1059 P3-26 DO YOU TUNE PARAMETRIC AMPLIFIERS

P1060 P3-27 DO YOU PERFORM OPERATIONAL CHECKS OF PARAMETRIC

AMPLIFIERS

P1061 P3-28 DO YOU TROUBLESHOOT PARAMETRIC AMPLIFIERS

P1062 P3-29 DO YOU REMOVE OR REPLACE COMPLETE PARAMETRIC

AMPLIFIER

P1063 P3-30 DO YOU REMOVE OR REPLACE PARAMETRIC AMPLIFIER

COMPONENTS

P1064 P3-31 DO YOU INSPECT MAGNETRONS

P1065 P3-32 DO YOU CLEAN MAGNETRONS

P1066 P3-33 DO YOU ADJUST MAGNETRONS

P1067 P3-34 DO YOU TUNE MAGNETRONS

P1068 P3-35 DO YOU PERFORM OPERATIONAL CHECKS OF MAGNETRONS

P1069 P3-36 DO YOU TROUBLESHOOT MAGNETRONS

P1070 P3-37 DO YOU REMOVE OR REPLACE COMPLETE MAGNETRON

P1071 P3-38 DO YOU REMOVE OR REPLACE MAGNETRON COMPONENTS

P1072 P3-39 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF

TWO-CAVITY KLYSTRONS COLLECTOR PLATES

P1073 P3-40 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF

TWO-CAVITY KLYSTRONS CATCHER CAVITIES

P1074 P3-41 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF

TWO-CAVITY KLYSTRONS CATCHER GRIDS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	022	023	024	025	026	027	028	029					
P1075 P3-42 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS FEEDBACK LOOPS	1	2	1	1	1	1	0	2	0				
P1076 P3-43 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS DRIFT SPACES	1	2	1	0	1	0	2	0					
P1077 P3-44 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER GRIDS	1	2	0	1	0	0	0	0					
P1078 P3-45 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER CAVITIES	1	2	0	1	0	0	0	0					
P1079 P3-46 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CONTROL GRIDS	2	5	1	1	1	0	2	0					
P1080 P3-47 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATHODES	2	6	1	1	0	0	0	0					
P1081 P3-48 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON REPELLER (REFLECTOR) PLATES	5	5	4	8	0	0	0	0					
P1082 P3-49 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRIDS	6	10	4	6	3	0	4	0					
P1083 P3-50 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRID CAVITY GAPS	3	5	2	5	0	0	0	0					
P1084 P3-51 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON RESONANT CAVITIES	6	3	5	8	0	0	0	0					
P1085 P3-52 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON MAGNETIC COUPLING LOOPS	2	5	1	4	0	0	0	0					
P1086 P3-53 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON FILAMENTS	6	6	5	8	0	0	0	0					
P1087 P3-54 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON CATHODES	5	6	4	7	0	0	0	0					
P1088 P3-55 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON OUTPUT LEADS	6	6	4	8	1	0	2	0					
P1089 P3-56 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES FILAMENTS	18	24	19	14	4	0	6	0					
P1090 P3-57 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES CATHODES	20	27	21	14	6	0	8	0					
P1091 P3-58 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MODULATOR GRIDS	17	21	17	15	6	0	8	0					
P1092 P3-59 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ANODES	18	22	18	14	4	0	6	0					
P1093 P3-60 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES HELICES	16	21	16	14	4	0	4	0					
P1094 P3-61 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES COLLECTORS	19	25	19	13	4	0	6	0					
P1095 P3-62 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MAGNETS	10	17	10	8	3	0	4	0					
P1096 P3-63 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ATTENUATORS	16	29	15	11	4	0	6	0					
P1097 P3-64 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE CIRCULATORS	0	0	1	0	0	0	0	0					
P1098 P3-65 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER SIGNAL CAVITIES	0	0	0	0	0	0	0	0					

0Y-TSK

PCT MRS ANSMRG YLS FOR 320X1 DAFSC GDS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC SPC SPC SPC SPC SPC
022 023 024 025 026 027 028 029

DT-TSK

P1099	P3-66	DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER IDLEW CAVITIES	0	0	0	0	0	0	0	0	0	0	0
P1100	P3-67	DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER VARACTOR DIODES	0	0	1	0	0	0	0	0	0	0	0
P1101	P3-68	DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE ISOLATORS	1	0	1	0	1	0	1	0	2	0	0
P1102	P3-69	DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER REVERSE-BIAS BATTERIES	0	0	0	0	0	0	0	0	0	0	0
P1103	P3-70	DO YOU PERFORM TASKS ON ANODES	4	6	3	4	3	4	3	0	4	0	0
P1104	P3-71	DO YOU PERFORM TASKS ON ANODE COOLING PINS	2	5	2	2	1	0	2	0	2	0	0
P1105	P3-72	DO YOU PERFORM TASKS ON COUPLING LOOPS	3	6	3	3	3	3	0	4	0	0	0
P1106	P3-73	DO YOU PERFORM TASKS ON HEATER LEADS	4	8	3	3	3	0	4	0	4	0	0
P1107	P3-74	DO YOU PERFORM TASKS ON RESONANT CAVITIES	6	8	4	8	1	0	2	0	2	0	0
P1108	P3-75	DO YOU PERFORM TASKS ON CATHODES	5	6	4	4	6	4	0	6	0	0	0
P1109	P3-76	DO YOU PERFORM TASKS ON MAGNETS	4	5	3	5	1	0	2	0	2	0	0
P1110	P1-01	DO YOU USE OR REFER TO STORAGE REGISTERS	23	17	21	31	16	0	10	32	0	12	42
P1111	P1-02	DO YOU USE OR REFER TO SHIFT REGISTERS	26	19	23	37	20	0	12	42	0	16	37
P1112	P1-03	DO YOU USE OR REFER TO LOGIC SYMBOLS OF SHIFT REGISTERS	25	21	23	30	21	0	16	37	0	16	37
P1113	P1-04	DO YOU USE OR REFER TO LOGIC SYMBOLS OF STORAGE REGISTERS	22	17	21	25	20	0	16	37	0	16	37
P1114	P1-05	DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	22	14	20	29	19	0	12	37	0	12	37
P1115	P1-06	DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF REGISTERS	18	13	16	25	17	0	12	32	0	12	32
P1116	P1-07	DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES	13	14	12	17	14	0	12	21	0	12	21
P1117	P2-01	DO YOU WORK WITH DIGITAL COUNTERS, REGISTERS, OR STORAGE DEVICES IN YOUR PRESENT JOB	31	29	28	37	33	100	29	37	0	29	37
P1118	P2-02	DO YOU USE OR REFER TO DELAY LINES	22	25	20	23	27	50	27	26	0	27	26
P1119	P2-03	DO YOU USE OR REFER TO MAGNETIC CORES	16	16	15	19	13	50	12	11	0	12	11
P1120	P2-04	DO YOU USE OR REFER TO MAGNETIC DRUMS	5	8	5	4	3	0	2	5	0	2	5
P1121	P2-05	DO YOU USE OR REFER TO MAGNETIC TAPES	17	16	13	26	13	0	10	21	0	10	21
P1122	P2-06	DO YOU USE OR REFER TO ACCESS TIME OR SPEED OR MEMORY SYSTEMS	13	11	11	18	4	0	4	5	0	4	5
P1123	P2-07	DO YOU USE OR REFER TO WORD CAPACITY OF MEMORY SYSTEMS	13	13	11	16	7	0	4	16	0	4	16
P1124	P2-08	DO YOU USE OR REFER TO VOLATILITY OF MEMORY SYSTEMS	7	6	6	9	3	0	2	5	0	2	5
P1125	P2-09	DO YOU USE OR REFER TO LOGIC SYMBOL OF DELAY LINES	13	14	11	16	19	50	20	11	0	20	11
P1126	P3-01	IN YOUR PRESENT JOB, DO YOU WORK WITH DIGITAL-TO-ANALOG (D/A) CONVERTERS, ANALOG-TO-DIGITAL (A/D) CONVERTERS, ANALOG (D/A) CONVERTERS, ANALOG-TO-ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT THE	30	35	25	38	19	100	14	21	0	14	21
P1127	P3-02	DO YOU COMPUTE OUTPUT VOLTAGES FOR ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT THE	2	3	2	2	1	0	2	0	0	2	0
P1128	P3-03	DO YOU USE OR REFER TO THE GENERAL RULE THAT THE COUNT IN ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A)	2	3	2	2	1	0	2	0	0	2	0

STORAGE DEVICES

DIGITAL TO
ANALOG CONVERTERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

0Y-TSK

	SPC 022	SPC 023	SPC 024	SPC 025	SPC 026	SPC 027	SPC 028	SPC 029
0129 Q3-04 DO YOU COMPUTE ANALOG VOLTAGES FOR GIVEN BINARY COUNTS IN ELECTROMIC DIGITAL-TO-ANALOG (D/A) CONVERTERS	3	5	2	2	1	0	2	0
0130 Q3-05 DO YOU PERFORM SAMPLE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	5	5	6	3	6	0	6	5
0131 Q3-06 DO YOU PERFORM HOLD FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	5	3	5	6	6	0	6	5
0132 Q3-07 DO YOU PERFORM COMPARE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	5	6	4	5	1	0	2	0
0133 Q3-08 DO YOU PERFORM DIGITIZE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	4	3	5	3	3	0	4	0
0134 Q3-09 DO YOU PERFORM DON'T REMEMBER WHICH FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	7	6	7	8	6	0	6	5
0135 Q3-10 DO YOU USE OR REFER TO SAMPLE FUNCTION OF A/D CONVERTERS	6	6	7	3	7	0	8	5
0136 Q3-11 DO YOU USE OR REFER TO HOLD FUNCTION OF A/D CONVERTERS	6	3	8	6	7	0	9	5
0137 Q3-12 DO YOU USE OR REFER TO COMPARE FUNCTION OF A/D CONVERTERS	6	6	6	5	3	0	4	0
0138 Q3-13 DO YOU USE OR REFER TO DIGITAL FUNCTION OF A/D CONVERTERS	7	6	8	5	6	0	8	0
0139 Q3-14 DO YOU PERFORM ANY TASKS ON MECHANICAL ANALOG-TO-DIGITAL (A/D) CONVERTERS	5	6	4	6	3	0	4	0
0140 R1-01 DO YOU WORK WITH PHANTASTRON CIRCUITRY IN YOUR PRESENT JOB	6	8	6	7	16	0	12	26
0141 R2-01 IN YOUR PRESENT JOB DO YOU WORK WITH SCHMITT TRIGGER CIRCUITS	26	29	24	28	37	50	39	32
0142 R2-02 DO YOU TRACE DATA FLOW THROUGH SCHMITT TRIGGER SCHEMATIC DIAGRAMS	18	16	17	21	24	0	22	32
0143 R2-03 DO YOU USE OR REFER TO SCHMITT TRIGGER LOGIC SYMBOLS	16	17	14	18	19	0	18	21
0144 R3-01 IN YOUR PRESENT JOB DO YOU FABRICATE MULTICONDUCTOR CABLES	44	27	44	54	46	0	45	53
0145 R3-02 DO YOU FABRICATE COAXIAL CABLES	54	46	54	59	50	0	51	53
0146 S1-01 IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS ON VISUAL READOUT SYSTEMS	47	52	45	49	27	0	31	21
0147 S1-02 DO YOU PERFORM ANY TASKS ON NIXIE LIGHTS OR NIXIE LIGHT DECODER SYSTEMS	27	19	26	37	11	0	14	5
0148 S1-03 DO YOU ANALYZE NIXIE LIGHT DECODER SYSTEMS USING BOOLEAN ALGEBRA	5	3	5	4	1	0	2	0
0149 S2-01 DO YOU WORK WITH PHOTO TUBES IN YOUR PRESENT JOB	5	6	4	5	0	0	0	0
0150 S3-01 IN YOUR PRESENT JOB DO YOU WORK WITH CHOPPER CIRCUITS	13	14	12	15	21	0	20	26
0151 S3-02 DO YOU MEASURE EXCITATION FREQUENCIES	3	3	2	5	6	0	4	11
0152 S3-03 DO YOU MEASURE VOLTAGE-CURRENT PHASE RELATIONSHIPS	2	2	2	2	3	0	4	0
0153 S3-04 DO YOU USE OR REFER TO EXCITATION FREQUENCIES	3	2	3	4	6	0	4	11
0154 S3-05 DO YOU USE OR REFER TO VOLTAGE-CURRENT PHASE RELATIONSHIPS	2	2	3	1	3	0	4	0
0155 S3-06 DO YOU USE SERVOS IN CONJUNCTION WITH CHOPPER CIRCUITRY OPERATION	7	10	6	9	16	0	14	21

PHANTASTRONS

SCHMITT TRIGGERS

CABLE FABRICATION

INPUT/OUTPUT DEVICES

PHOTO SENSITIVE DEVICES

SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS)

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UY-TSK

51156 S3-07 DO YOU USE DETECTORS IN CONJUNCTION WITH CHOPPER
CIRCUIT OPERATION 8 10 7 9 11 0 10 16

51157 S3-08 DO YOU USE ERROR SIGNAL DEVICES IN CONJUNCTION WITH
COPPER CIRCUIT OPERATION 8 6 8 10 19 0 16 26

51158 S3-09 DO YOU USE COMPARISON CIRCUITS IN CONJUNCTION WITH
COPPER CIRCUIT OPERATION 9 11 8 9 13 0 12 16

11159 T1-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH
INFRARED SYSTEMS 18 21 18 17 0 0 0 0

11160 T1-02 DO YOU INSPECT INFRARED SYSTEMS 14 19 14 12 0 0 0 0

11161 T1-03 DO YOU CLEAN INFRARED SYSTEMS 13 19 13 10 0 0 0 0

11162 T1-04 DO YOU ADJUST OR CALIBRATE INFRARED SYSTEMS 14 19 14 12 0 0 0 0

11163 T1-05 DO YOU OPERATE INFRARED SYSTEMS 14 14 14 13 0 0 0 0

11164 T1-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF INFRARED
SYSTEMS 13 13 13 12 0 0 0 0

11165 T1-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF INFRARED
SYSTEMS 15 16 15 13 0 0 0 0

11166 T1-08 DO YOU TROUBLESHOOT DOWN TO INFRARED SYSTEM
COMPONENT PARTS 11 11 11 9 0 0 0 0

11167 T1-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF
INFRARED SYSTEMS 14 19 13 11 0 0 0 0

11168 T1-10 DO YOU REMOVE OR REPLACE INFRARED SYSTEM
COMPONENT PARTS 11 14 11 8 0 0 0 0

11169 T1-11 DO YOU USE OR REFER TO FAR REGION 6 6 6 5 0 0 0 0

11170 T1-12 DO YOU USE OR REFER TO INTERMEDIATE REGION 6 6 6 5 0 0 0 0

11171 T1-13 DO YOU USE OR REFER TO NEAR REGION 6 8 6 5 0 0 0 0

11172 T1-14 DO YOU USE OR REFER TO MICRON 8 14 8 7 0 0 0 0

11173 T1-15 DO YOU USE OR REFER TO GRAY BODIES 7 11 7 6 0 0 0 0

11174 T1-16 DO YOU USE OR REFER TO BLACK BODIES 14 14 15 14 0 0 0 0

11175 T1-17 DO YOU USE OR REFER TO ABSORPTION 9 13 9 7 0 0 0 0

11176 T1-18 DO YOU USE OR REFER TO SCATTERING 6 10 6 7 0 0 0 0

11177 T1-19 DO YOU USE OR REFER TO ABSOLUTE ZERO 11 13 12 9 0 0 0 0

11178 T1-20 DO YOU PERFORM TASKS ON BLITZ 1 3 1 1 0 0 0 0

11179 T1-21 DO YOU PERFORM TASKS ON TARGET BUTTONS 2 3 1 5 0 0 0 0

11180 T1-22 DO YOU PERFORM TASKS ON ERECTOR LENSES 3 6 3 2 0 0 0 0

11181 T1-23 DO YOU PERFORM TASKS ON OCULAR LENSES 5 10 4 3 0 0 0 0

11182 T1-24 DO YOU PERFORM TASKS ON CORRECTION LENSES 4 6 4 4 0 0 0 0

11183 T1-25 DO YOU PERFORM TASKS ON FILTERS 8 16 6 8 0 0 0 0

11184 T1-26 DO YOU PERFORM TASKS ON SPHERICAL MIRRORS 3 5 3 3 0 0 0 0

11185 T1-27 DO YOU PERFORM TASKS ON PLANE MIRRORS 3 3 3 3 0 0 0 0

11186 T2-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH
LASERS 0 0 0 1 0 0 0 0

11187 T2-02 DO YOU INSPECT LASER SYSTEMS 0 0 0 1 0 0 0 0

11188 T2-03 DO YOU CLEAN LASER SYSTEMS 0 0 0 0 0 0 0 0

11189 T2-04 DO YOU OPERATE LASER SYSTEMS 0 0 0 1 0 0 0 0

11190 T2-05 DO YOU OPERATE LASER SYSTEMS 0 0 0 1 0 0 0 0

11191 T2-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF
LASER SYSTEMS 0 0 0 0 0 0 0 0

LASERS

INFRARED

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC SPC SPC SPC SPC SPC SPC
022 023 024 025 026 027 028 029

CV-TSK

DESCRIPTION	022	023	024	025	026	027	028	029
T1192 T2-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF LASER SYSTEMS	0	2	0	0	0	0	0	0
T1193 T2-08 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF LASER SYSTEMS	0	2	0	0	0	0	0	0
T1194 T2-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF LASER SYSTEMS	0	2	0	0	0	0	0	0
T1195 T2-10 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF LASER SYSTEMS	0	2	0	0	0	0	0	0
T1196 T2-11 DO YOU USE OR REFER TO ANGSTROMS (A)	0	0	0	0	0	0	0	0
T1197 T2-12 DO YOU USE OR REFER TO ELECTRON ENERGY LEVELS	0	0	0	0	0	0	0	0
T1198 T2-13 DO YOU USE OR REFER TO GROUND STATE	0	0	2	0	0	0	0	0
T1199 T2-14 DO YOU USE OR REFER TO EXCITED STATE	0	0	2	0	0	0	0	0
T1200 T2-15 DO YOU USE OR REFER TO PACKET OF RADIATION	0	0	0	0	0	0	0	0
T1201 T2-16 DO YOU USE OR REFER TO PHOTONS	0	0	0	0	0	0	0	0
T1202 T2-17 DO YOU USE OR REFER TO SPONTANEOUS EMISSION	0	0	0	0	0	0	0	0
T1203 T2-18 DO YOU USE OR REFER TO STIMULATED EMISSION	0	0	0	1	0	0	0	0
T1204 T2-19 DO YOU USE OR REFER TO COHERENCE OR INCOHERENCE	0	0	0	1	0	0	0	0
T1205 T2-20 DO YOU USE OR REFER TO INVERSION LEVEL	0	2	0	0	0	0	0	0
T1206 T2-21 DO YOU USE OR REFER TO MONOCHROMATIC	0	2	0	0	1	0	0	0
T1207 T2-22 DO YOU WORK WITH ACTIVE MATERIALS	0	2	0	1	0	0	0	0
T1208 T2-23 DO YOU WORK WITH PUMPING SOURCES	0	0	0	1	0	0	0	0
T1209 T2-24 DO YOU WORK WITH FULL SILVERED (100% REFLECTIVE) MIRRORS	0	0	0	1	0	0	0	0
T1210 T2-25 DO YOU WORK WITH HALF SILVERED (92% REFLECTIVE) MIRRORS	0	0	0	0	0	0	0	0
T1211 T2-26 DO YOU WORK WITH MELICAL FLASHTUBES	0	0	0	0	0	0	0	0
T1212 T2-27 DO YOU WORK WITH RUBY	0	0	0	0	0	0	0	0
T1213 T2-28 DO YOU WORK WITH HELIUM-NEON	0	0	0	1	0	0	0	0
T1214 T2-29 DO YOU WORK WITH HELIUM-XENON	0	0	0	0	0	0	0	0
T1215 T2-30 DO YOU WORK WITH XENON	0	0	0	0	0	0	0	0
T1216 T2-31 DO YOU WORK WITH CESIUM-HELIUM	0	0	0	0	0	0	0	0
T1217 T2-32 DO YOU WORK WITH ARGON	0	0	0	0	0	0	0	0
T1218 T2-33 DO YOU WORK WITH NEODYMIUM IN GLASS	0	0	0	1	0	0	0	0
T1219 T2-34 DO YOU WORK WITH GALLIUM ARSENIDE	0	0	0	0	0	0	0	0
T1220 T3-01 IN YOUR PRESENT JOB DO YOU WORK WITH DISPLAY TUBES, SUCH AS DIRECT VIEW STORAGE (DVST) OR MULTIPLE MODE	24	32	19	30	4	0	6	0
T1221 T3-02 DO YOU INSPECT DVST OR MMST	21	27	17	26	3	0	4	0
T1222 T3-03 DO YOU CLEAN DVST OR MMST	18	24	14	24	3	0	4	0
T1223 T3-04 DO YOU ADJUST OR CALIBRATE DVST OR MMST	15	19	12	21	3	0	4	0
T1224 T3-05 DO YOU OPERATE SYSTEMS THAT CONTAIN DVST OR MMST	21	25	17	28	4	0	6	0
T1225 T3-06 DO YOU TROUBLESHOOT DVST OR MMST CIRCUITS	16	21	13	20	3	0	4	0
T1226 T3-07 DO YOU REMOVE OR REPLACE DVST OR MMST TUBES FROM MAJOR ASSEMBLIES OR UNITS	20	24	14	26	3	0	4	0
T1227 T3-08 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF DVST	7	5	6	10	1	0	2	0

DISPLAY TUBES

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC SPC SPC SPC SPC SPC
022 023 024 025 026 027 028 029

0Y-TSK

T1228 T3-09 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME

THE VARIOUS ELEMENTS OF MMST

T1229 T3-10 DO YOU PERFORM TASKS ON FLOOD GUNS

T1230 T3-11 DO YOU PERFORM TASKS ON WRITE GUNS

T1231 T3-12 DO YOU PERFORM TASKS ON ATTACK GUNS

T1232 T3-13 DO YOU PERFORM TASKS ON ERASE GUNS

T1233 T3-14 DO YOU PERFORM TASKS ON STORAGE GRIDS

T1234 01-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY PROGRAMMING

TASKS

U1235 01-02 DO YOU USE OR REFER TO DECIMAL SYSTEMS

U1236 01-03 DO YOU USE OR REFER TO PROGRAMS

U1237 01-04 DO YOU USE OR REFER TO HEXIDECIMAL SYSTEMS

U1238 01-05 DO YOU USE OR REFER TO 8-4-2-1 SYSTEMS

U1239 01-06 DO YOU USE OR REFER TO FOUR SYSTEMS

U1240 01-07 DO YOU USE OR REFER TO BINARY SYSTEMS

U1241 01-08 DO YOU USE OR REFER TO TIME-SHARING

U1242 01-09 DO YOU USE OR REFER TO DATA WORDS

U1243 01-10 DO YOU USE OR REFER TO ADDRESS WORDS

U1244 01-11 DO YOU USE OR REFER TO ADDRESS/SUBADDRESS

U1245 01-12 DO YOU USE OR REFER TO STEERING/INFORMATION

U1246 01-13 DO YOU USE OR REFER TO INFORMATION WORDS

U1247 01-14 DO YOU PERFORM TASKS ON SINGLE LEVEL PROGRAMMING

U1248 01-15 DO YOU PERFORM TASKS ON MULTI-LEVEL PROGRAMMING

U1249 01-16 DO YOU PERFORM TASKS ON INPUT DEVICES

U1250 01-17 DO YOU PERFORM TASKS ON STORAGE DEVICES

U1251 01-18 DO YOU PERFORM TASKS ON ARITHMETIC SECTIONS

U1252 01-19 DO YOU PERFORM TASKS ON CONTROL SECTIONS

U1253 01-20 DO YOU PERFORM TASKS ON OUTPUT DEVICES

U1254 01-21 DO YOU PERFORM TASKS ON POWER SUPPLIES

U1255 02-01 DO YOU USE DECIBELS TO EXPRESS AMPLIFICATION AND

ATTENUATION

U1256 02-02 DO YOU USE LOGARITHMS TO COMPUTE OUTPUT POWER IN

DECIBELS

U1257 02-03 DO YOU USE LOGARITHMS TO COMPUTE ATTENUATION IN

DECIBELS

DB AND POWER
RATIOS

3	3	2	6	0	0	0	0
7	11	7	7	1	0	2	0
10	13	9	12	1	0	2	0
2	6	2	1	0	0	0	0
8	11	8	8	1	0	2	0
7	11	7	7	0	0	0	0
26	30	26	24	4	0	6	0
13	17	13	10	3	0	4	0
22	25	22	18	3	0	4	0
17	22	17	14	1	0	2	0
7	10	7	7	1	0	2	0
2	3	2	2	1	0	2	0
16	17	16	16	4	0	6	0
12	16	11	12	3	0	4	0
21	25	21	19	3	0	4	0
23	27	22	24	3	0	4	0
19	22	17	20	3	0	4	0
14	16	13	16	3	0	4	0
20	24	19	21	3	0	4	0
10	16	9	10	3	0	4	0
8	14	8	6	3	0	4	0
9	10	10	8	1	0	2	0
8	5	9	8	1	0	2	0
7	5	8	8	1	0	2	0
9	11	9	8	3	0	4	0
9	11	9	8	1	0	2	0
10	11	10	8	1	0	2	0
61	52	62	62	86	100	86	84
8	5	9	7	14	0	16	11
9	6	10	8	14	0	16	11

PCT MBR ANSWRING YES FOR 326X1 DAFSC GRPS

PERCENT MEMBERS ANSWERING YES TO EPI ITEMS BY DAFSC
GROUPS IN THE 326X1 CAREER LADDER.

REPORTS ON THE FOLLOWING GROUPS WERE REQUESTED

GROUP IDENTITY ■ SPC030 ALL AMN 326X1D	CONTAINING	147 MEMBERS*
GROUP IDENTITY ■ SPC031 ALL AMN 32631D	CONTAINING	26 MEMBERS*
GROUP IDENTITY ■ SPC032 ALL AMN 32651D	CONTAINING	83 MEMBERS*
GROUP IDENTITY ■ SPC033 ALL AMN 32671D	CONTAINING	38 MEMBERS*
GROUP IDENTITY ■ SPC034 ALL AMN 326X1E	CONTAINING	87 MEMBERS*
GROUP IDENTITY ■ SPC035 ALL AMN 32631E	CONTAINING	13 MEMBERS*
GROUP IDENTITY ■ SPC036 ALL AMN 32651E	CONTAINING	51 MEMBERS*
GROUP IDENTITY ■ SPC037 ALL AMN 32671E	CONTAINING	23 MEMBERS*

PCT MBR5 ANSWRNG YES FOR 326X1 DAFSC GRPS

DUTY GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DUTY	SPC 030	SPC 031	SPC 032	SPC 033	SPC 034	SPC 035	SPC 036	SPC 037
A MATHEMATICS, DIRECT CURRENT, VOLTAGE, AND RESISTANCE	100	100	100	100	98	100	100	91
B MULTIMETER USES, ALTERNATING CURRENT, INDUCTORS, AND INDUCTIVE CAPACITORS, CAPACITIVE REACTANCE, TRANSFORMERS, AND MAGNETISM	99	100	99	97	99	100	100	96
C RCL CIRCUITS, SERIES AND PARALLEL RESONANCE (TIME CONSTANTS), AND FILTERS	84	77	88	82	87	92	84	91
D COUPLING, SOLDERING, AND RELAYS	65	58	65	68	79	85	80	74
E MICROPHONES, SPEAKERS, AND OSCILLOSCOPES	95	92	95	95	95	100	96	91
F SEMICONDUCTOR DIODES, TRANSISTORS, AND TRANSISTOR AMPLIFIERS	93	88	98	87	98	100	100	91
G SPECIAL PURPOSE DEVICES, POWER SUPPLIES, AND OSCILLATORS	75	69	75	79	84	85	82	87
H SOLID STATE SPECIAL PURPOSE DEVICES, POWER SUPPLIES, AND OSCILLATORS	91	88	89	97	98	100	98	96
I MULTIVIBRATORS, LIMITERS, CLAMPERS, AND ELECTRON TUBES	39	35	33	58	68	85	57	83
J ELECTRON TUBE AMPLIFIERS AND CIRCUITS, SPECIAL PURPOSE ELECTRON TUBES, METEROLOGY, MODULATION, AM SYSTEMS, FM SYSTEMS, AND NUMBERING SYSTEMS	60	58	58	66	63	100	78	83
K LOGIC FUNCTIONS, BOOLEAN EQUATIONS, AND COUNTERS	44	27	45	55	61	62	57	70
L TIMING CIRCUITS, USE OF SIGNAL GENERATORS, MOTORS, AND GENERATORS	47	31	48	55	82	77	80	87
M METER MOVEMENTS, SATURABLE REACTORS, MAGNETIC AMPLIFIERS, AND WAVE SHAPING CIRCUITS	81	69	87	76	92	100	92	87
N SINGLE SIDEBAND SYSTEMS, PULSE MODULATION SYSTEMS, AND ANTENNAS	80	85	80	76	97	100	98	91
O TRANSMISSION LINES, WAVEGUIDES AND CAVITY RESONATORS, AND MICROWAVE AMPLIFIERS AND OSCILLATORS	52	46	53	53	77	92	71	83
P REGISTERS, STORAGE DEVICES, AND DIGITAL TO ANALOG CONVERTERS	61	62	57	66	89	92	88	87
Q PHOTODIODES, SCHMITT TRIGGERS, AND CABLE FABRICATION	55	50	54	61	56	62	49	70
R INPUT/OUTPUT DEVICES, PHOTO SENSITIVE DEVICES, AND SYNCHRONOUS VIBRATIONS	54	38	57	61	74	69	73	78
T INFRARED LASERS, AND DISPLAY TUBES	56	54	54	63	56	69	53	57
U PROGRAMMING, DB AND POWER RATIOS	33	27	28	50	74	92	67	78
V	62	58	63	63	83	85	84	78

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	030	031	032	033	034	035	036	037	038	039	040	041	042	043	044	045	046	047	048	049
1	81	96	83	66	92	92	92	94	87											
2	39	42	43	29	62	54	63	65												
3	22	27	23	16	40	46	39	39												
4	7	12	6	8	9	23	8	4												
5	20	19	22	16	26	46	24	22												
6	3	4	1	5	3	8	0	9												
7	5	8	2	8	7	8	4	13												
8	3	4	2	3	2	8	0	4												
9	4	4	2	8	0	0	0	0												
10	7	4	6	11	7	15	6	4												
11	20	8	20	26	9	15	8	9												
12	2	0	0	8	1	0	2	0												
13	6	8	4	11	3	0	4	4												
14	15	12	14	18	21	15	24	17												
15	97	100	95	100	98	100	100	91												
16	24	27	20	29	26	31	25	26												
17	97	100	94	100	95	92	100	87												
18	7	8	4	13	9	15	8	9												
19	3	0	2	8	5	8	4	4												
20	86	92	86	84	87	85	88	87												
21	7	12	5	8	8	15	6	9												
22	8	8	5	14	11	15	12	9												
23	7	12	5	11	10	23	8	9												
24	79	65	83	79	80	69	84	78												
25	85	81	88	82	77	77	76	78												
26	41	19	48	39	49	38	57	39												
27	80	65	86	76	90	77	92	91												
28	78	65	82	76	79	69	82	78												
29	69	50	73	74	66	46	69	70												
30	14	8	12	24	20	23	18	22												
31	68	50	72	71	84	85	80	91												
32	61	50	63	63	76	85	71	83												

DIRECT CURRENT
AND VOLTAGE

RESISTANCE

MATHEMATICS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	030	031	032	033	034	035	03A	037					
8 88 83-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTIVE REACTANCE IS DIRECTLY PROPORTIONAL TO	8	8	7	11	22	15	22	26					
9 89 83-23 DO YOU WORK WITH POWER INDUCTORS.	29	19	30	34	31	38	33	22					
4 90 83-24 DO YOU WORK WITH AUDIO FREQUENCY INDUCTORS.	24	19	23	32	23	31	20	26					
5 91 83-25 DO YOU WORK WITH RADIO FREQUENCY INDUCTORS.	37	31	37	42	44	38	39	57					
C 92 C1-01 DO YOU WORK WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS ON YOUR PRESENT JOB.	68	69	66	71	76	77	76	74					
C 93 C1-02 DO YOU INSPECT CAPACITORS.	69	58	71	71	56	31	59	65					
C 94 C1-03 DO YOU CLEAN CAPACITORS.	35	19	42	32	34	15	43	26					
C 95 C1-04 DO YOU ADJUST CAPACITORS.	35	27	35	42	46	46	47	43					
C 96 C1-05 DO YOU TEST CAPACITORS.	46	23	48	58	39	15	45	39					
C 97 C1-06 DO YOU DISCHARGE CAPACITORS.	33	23	40	26	52	38	51	61					
C 98 C1-07 DO YOU REMOVE OR REPLACE CAPACITORS.	50	35	55	50	45	23	41	65					
C 99 C1-08 DO YOU USE OR REFER TO DISTRIBUTED CAPACITANCE.	5	4	4	8	8	8	6	13					
C 100 C1-09 DO YOU USE OR REFER TO ORBITAL STRESS OF ELECTRONS IN A DIELECTRIC.	1	0	1	0	0	0	0	0					
C 101 C1-10 DO YOU USE OR REFER TO FARADS, MICROFARADS, OR PICOFARADS.	46	35	43	58	59	54	55	70					
C 102 C1-11 DO YOU USE OR REFER TO CAPACITANCE.	54	38	57	58	61	38	63	70					
C 103 C1-12 DO YOU USE OR REFER TO DIELECTRIC CONSTANT.	4	0	6	3	11	8	12	13					
C 104 C1-13 DO YOU USE OR REFER TO WORKING VOLTAGE RATING OF CAPACITORS.	26	8	29	32	39	38	41	35					
C 105 C1-14 DO YOU USE OR REFER TO CAPACITIVE REACTANCE.	14	4	14	18	26	15	24	39					
C 106 C1-15 DO YOU USE OR REFER TO CAPACITOR COLOR CODES.	14	8	16	16	22	15	20	30					
C 107 C1-16 THE CAPACITORS YOU WORK WITH IN DC CIRCUITS.	65	62	64	71	72	54	73	83					
C 108 C1-17 THE CAPACITORS YOU WORK WITH ARE IN AC CIRCUITS.	64	58	65	66	68	54	69	74					
C 109 C1-18 THE CAPACITORS YOU WORK WITH ARE IN CIRCUITS WITH BOTH DC AND AC.	63	48	63	74	67	54	67	74					
C 110 C1-19 THE CAPACITORS YOU WORK WITH ARE DONT REMEMBER WHICH CIRCUITS.	16	31	16	8	14	8	16	13					
C 111 C1-20 DO YOU CALCULATE CAPACITANCE FOR A PARTICULAR CAPACITOR USING FORMULAS.	1	0	1	3	3	8	4	0					
C 112 C1-21 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE CAPACITANCE OF A CAPACITOR IS DIRECTLY PROPORTIONAL	0	0	0	0	0	7	8	9					
C 113 C1-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE CAPACITANCE OF A CAPACITOR IS INVERSELY PROPORTIONAL	0	0	0	0	0	6	0	13					
C 114 C1-23 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES.	8	8	7	11	13	8	14	13					
C 115 C1-24 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN PARALLEL.	8	8	7	11	13	8	14	13					
C 116 C1-25 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES-PARALLEL CIRCUITS.	7	8	6	11	13	15	12	13					
C 117 C1-26 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT DOES NOT FLOW THROUGH CAPACITORS, IT ONLY	17	8	19	18	28	23	27	30					

CAPACITORS AND
CAPACITIVE REACTANCE

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	030	031	032	033	034	035	036	037	038	039	040	041	042	043
C 118 C1-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEADS VOLTAGE IN AC CAPACITOR CIRCUITS.	12	4	10	24	18	15	20	17						
C 119 C1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITIVE REACTANCE IS INVERSELY PROPORTIONAL TO CAPACITANCE.	6	4	5	11	17	8	18	22						
C 120 C1-29 DO YOU CALCULATE CAPACITIVE REACTANCE.	4	4	4	5	11	15	10	13						
C 121 C1-30 DO YOU WORK WITH ROTOR-STATOR CAPACITORS (VARIABLE).	25	19	19	42	32	31	37	22						
C 122 C1-31 DO YOU WORK WITH COMPRESSION (TRIMMER) CAPACITORS.	22	15	20	32	21	23	18	26						
C 123 C1-32 DO YOU WORK WITH ELECTROLYTIC CAPACITORS (FIXED).	52	35	49	68	61	38	59	78						
C 124 C1-33 DO YOU WORK WITH PAPER CAPACITORS (FIXED).	43	19	41	63	46	23	45	61						
C 125 C1-34 DO YOU WORK WITH MICA CAPACITORS (FIXED).	46	27	42	68	54	38	51	70						
C 126 C1-35 DO YOU WORK WITH CERAMIC CAPACITORS (FIXED).	47	35	42	66	54	31	51	74						
C 127 C1-36 DO YOU WORK WITH DONT REMEMBER WHICH TYPE OF CAPACITORS.	24	31	31	5	18	23	22	9						
C 128 C2-01 DO YOU WORK WITH TRANSFORMERS ON YOUR PRESENT JOB.	71	50	74	68	69	62	67	78						
C 129 C2-02 DO YOU INSPECT TRANSFORMERS.	67	50	71	68	49	23	55	52						
C 130 C2-03 DO YOU CLEAN TRANSFORMERS.	35	15	47	24	29	8	33	30						
C 131 C2-04 DO YOU ADJUST TRANSFORMERS.	26	19	27	29	29	46	25	26						
C 132 C2-05 DO YOU TROUBLESHOOT TRANSFORMERS.	48	38	49	50	46	31	45	57						
C 133 C2-06 DO YOU REMOVE OR REPLACE COMPLETE TRANSFORMERS.	57	46	65	47	49	38	49	57						
C 134 C2-07 DO YOU REMOVE OR REPLACE TRANSFORMER PARTS, SUCH AS THE PRIMARY WINDING.	3	0	4	3	2	15	0	0						
C 135 C2-08 DO YOU MAKE A DISTINCTION BETWEEN MUTUAL INDUCTION AND MUTUAL INDUCTANCE (M).	1	0	1	3	5	8	6	0						
C 136 C2-09 DO YOU USE THE SYMBOL FOR MUTUAL INDUCTANCE, M.	1	0	1	3	3	8	2	4						
C 137 C2-10 DO YOU REFER TO OR USE THE COEFFICIENT OF COUPLING WHEN WORKING WITH TRANSFORMERS.	2	0	2	3	7	15	6	4						
C 138 C2-11 DO YOU CALCULATE TURNS RATIOS FOR TRANSFORMERS USING CURRENT OR VOLTAGE RATIOS.	3	0	2	5	8	8	8	9						
C 139 C2-12 DO YOU REFER TO REFLECTED IMPEDANCE WHEN WORKING WITH TRANSFORMERS.	3	0	2	5	6	15	4	4						
C 140 C2-13 DO YOU CALCULATE IMPEDANCE INTERACTIONS FOR TRANSFORMERS.	2	0	2	3	6	15	6	0						
C 141 C2-14 DO YOU WORK WITH AUTOTRANSFORMERS.	21	23	18	26	24	23	18	39						
C 142 C2-15 DO YOU WORK WITH POWER TRANSFORMERS.	56	31	59	68	54	31	53	70						
C 143 C2-16 DO YOU WORK WITH AUDIO TRANSFORMERS.	29	15	29	32	28	15	29	30						
C 144 C2-17 DO YOU WORK WITH RADIO FREQUENCY TRANSFORMERS.	36	27	35	45	43	31	43	48						
C 145 C2-18 DO YOU WORK WITH DONT REMEMBER WHAT TYPE OF TRANSFORMER.	20	35	23	5	15	15	16	13						
C 146 C2-19 DO YOU CHECK TRANSFORMERS FOR OPEN WINDINGS BY MEASURING RESISTANCE.	49	23	55	53	52	23	49	74						
C 147 C2-20 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING RESISTANCE.	46	23	51	50	51	23	49	70						
C 148 C2-21 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING OUTPUT VOLTAGES.	42	23	46	47	38	23	35	52						
C 149 C2-22 DO YOU MEASURE RESISTANCE OF TRANSFORMER WINDINGS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR	6	0	11	6	13	15	14	9						

TRANSFORMERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

BY-TSK	SPC 030	SPC 031	SPC 032	SPC 033	SPC 034	SPC 035	SPC 036	SPC 037
C 150 C2-23 DO YOU MEASURE OUTPUT VOLTAGE OF TRANSFORMERS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN?	15	4	18	13	16	15	14	22
C 151 C2-24 DO YOU REFER TO THE BASIC TRANSFORMER SCHEMATIC SYMBOLS FOR TRANSFORMERS?	59	42	64	61	61	46	61	70
C 152 C2-25 DO YOU REFER TO THE MULTIPLE SECONDARY WINDINGS SCHEMATIC SYMBOLS FOR TRANSFORMERS?	48	31	49	58	46	38	43	57
C 153 C2-26 DO YOU REFER TO THE MULTIPLE TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS?	50	31	51	61	48	38	47	57
C 154 C2-27 DO YOU REFER TO THE CENTER TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS?	52	31	54	61	54	46	51	65
C 155 C2-28 DO YOU REFER TO THE AIR CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS?	30	15	34	32	34	38	35	30
C 156 C2-29 DO YOU REFER TO THE IRON CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS?	31	15	35	32	41	38	43	39
C 157 C2-30 DO YOU REFER TO THE COMBINATIONS OF THE ABOVE SCHEMATIC SYMBOLS FOR TRANSFORMERS?	47	27	55	42	46	38	49	43
C 158 C2-31 DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING TRANSFORMERS YOU WORK WITH?	20	15	17	32	24	15	24	30
C 159 C2-32 DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN TRANSFORMERS YOU WORK WITH?	7	8	6	8	15	8	18	13
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 RATIOS FOR TRANSFORMERS?	7	4	7	11	14	8	18	9
C 161 C2-34 DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN USING TURNS RATIOS?	17	6	16	26	16	8	16	17
C 162 C2-35 DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS USING TURNS RATIOS?	5	0	6	5	5	8	6	0
C 163 C2-36 DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS USING TURNS RATIOS?	3	0	4	3	3	8	4	0
C 164 C2-37 DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH 3 PHASE TRANSFORMERS?	35	27	33	47	40	31	37	52
C 165 C2-38 DO YOU INSPECT 3 PHASE TRANSFORMERS?	35	27	33	45	34	8	41	35
C 166 C2-39 DO YOU CLEAN OR LUBRICATE 3 PHASE TRANSFORMERS?	10	4	10	13	9	15	12	0
C 167 C2-40 DO YOU ADJUST 3 PHASE TRANSFORMERS?	10	12	10	8	13	23	10	13
C 168 C2-41 DO YOU TROUBLESHOOT 3 PHASE TRANSFORMERS?	22	12	20	32	29	8	31	35
C 169 C2-42 DO YOU REMOVE OR REPLACE COMPLETE 3 PHASE TRANSFORMER?	26	15	28	29	28	15	24	30
C 170 C2-43 DO YOU REMOVE OR REPLACE 3 PHASE TRANSFORMER PARTS SUCH AS WINDINGS?	1	0	1	3	2	15	0	0
C 171 C3-01 DO YOU USE OR REFER TO PERMANENT MAGNETS?	36	27	40	34	24	31	27	13
C 172 C3-02 DO YOU USE OR REFER TO TEMPORARY MAGNETS?	20	15	20	24	14	31	14	4
C 173 C3-03 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS?	3	0	5	3	5	15	4	0
C 174 C3-04 DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC MATERIALS?	3	0	5	0	6	23	4	0

MAGNETISM

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC SPC SPC SPC SPC SPC SPC SPC
030 031 032 033 034 035 036 037

0Y=15K

C 175 C3-05	DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS.	4	4	6	0	6	15	6	0
C 176 C3-06	DO YOU USE OR REFER TO RESIDUAL MAGNETISM.	4	0	5	5	7	23	4	4
C 177 C3-07	DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE OR FLUX.	14	12	17	8	11	23	8	13
C 178 C3-08	DO YOU USE OR REFER TO WEBER'S THEORY OF MAGNETISM.	1	0	1	0	3	8	2	4
C 179 C3-09	DO YOU USE OR REFER TO THE DOMAIN THEORY OF MAGNETISM.	2	4	2	0	3	15	0	4
C 180 C3-10	DO YOU USE OR REFER TO MAGNETIC INDUCTION.	10	8	11	8	13	15	10	17
C 181 C3-11	DO YOU USE OR REFER TO FLUX DENSITY.	5	4	5	5	6	15	6	0
C 182 C3-12	DO YOU USE OR REFER TO THE GENERAL RULE THAT FOR MAGNETIC POLES, LIKE POLES REPEL AND UNLIKE POLES ATTRACT.	25	19	25	29	28	46	25	22
C 183 C3-13	DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE DIRECTION OF MAGNETIC FIELDS ABOUT STRAIGHT WIRES.	7	8	8	5	14	15	14	13
C 184 C3-14	DO YOU USE THE LEFT THUMB RULE TO FIND THE NORTH POLE OF A CURRENT-CARRYING COIL.	5	8	5	5	14	31	8	17
D 185 D1-01	DO YOU WORK WITH RC, LR, OR RCL CIRCUITS ON YOUR PRESENT JOB.	37	31	35	47	49	46	51	48
D 186 D1-02	DO YOU USE OR REFER TO VECTORS WHEN WORKING WITH RCL CIRCUITS.	6	8	5	8	9	15	8	9
D 187 D1-03	DO YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN WORKING WITH RCL CIRCUITS.	3	8	2	3	3	0	4	4
D 188 D1-04	DO YOU USE OR REFER TO SINE WHEN WORKING WITH RCL CIRCUITS.	7	12	5	11	8	8	8	9
D 189 D1-05	DO YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL CIRCUITS.	7	12	5	11	7	8	6	9
D 190 D1-06	DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL CIRCUITS.	7	8	5	11	7	8	6	9
D 191 D1-07	DO YOU USE OR REFER TO WATTS WHEN WORKING WITH RCL CIRCUITS.	18	15	17	21	29	23	29	30
D 192 D1-08	DO YOU USE OR REFER TO TRUE POWER (PT) WHEN WORKING WITH RCL CIRCUITS.	9	15	6	11	16	0	18	22
D 193 D1-09	DO YOU USE OR REFER TO MAXIMUM POWER (PM) WHEN WORKING WITH RCL CIRCUITS.	11	15	8	13	18	15	18	22
D 194 D1-10	DO YOU USE OR REFER TO AVERAGE POWER (PAVE) WHEN WORKING WITH RCL CIRCUITS.	16	15	12	24	22	23	22	22
D 195 D1-11	DO YOU USE OR REFER TO APPARENT POWER (PA) WHEN WORKING WITH RCL CIRCUITS.	8	15	5	11	14	8	16	9
D 196 D1-12	DO YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING WITH RCL CIRCUITS.	6	8	4	11	10	8	14	4
D 197 D1-13	DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN WORKING WITH RCL CIRCUITS.	19	15	16	29	29	15	35	22
D 198 D1-14	DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH RCL CIRCUITS.	25	19	22	37	41	46	41	39
D 199 D1-15	DO YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH RCL CIRCUITS.	21	19	17	32	34	38	35	30

PCT MBMS ANSWERING YES FOR 324X1 DAFSC GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	030	031	032	033	034	035	036	037					
0 200 DI-16 DO YOU USE OR REFER TO RESONANT FREQUENCY WHEN WORKING WITH RCL CIRCUITS.	27	19	24	37	31	23	37	22					
0 201 DI-17 DO YOU USE OR REFER TO HALF POWER POINTS WHEN WORKING WITH RCL CIRCUITS.	18	15	13	29	26	38	25	22					
0 202 DI-18 DO YOU USE OR REFER TO BANDPASS REGION WHEN WORKING WITH RCL CIRCUITS.	16	19	12	24	32	23	37	26					
0 203 DI-19 DO YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH RCL CIRCUITS.	7	12	5	8	17	15	18	17					
0 204 DI-20 DO YOU USE OR REFER TO TANK CIRCUITS WHEN WORKING WITH RCL CIRCUITS.	20	19	14	34	36	31	39	30					
0 205 DI-21 DO YOU DETERMINE VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS: SINE OF AN ANGLE = OPPOSITE SIDE / HYPOTENUSE; COSINE OF AN ANGLE = ADJACENT SIDE / HYPOTENUSE; TANGENT OF AN ANGLE = OPPOSITE SIDE / ADJACENT SIDE; SECANT OF AN ANGLE = HYPOTENUSE / ADJACENT SIDE; COTANGENT OF AN ANGLE = ADJACENT SIDE / OPPOSITE SIDE; CSCANT OF AN ANGLE = HYPOTENUSE / OPPOSITE SIDE; SECANT OF AN ANGLE = HYPOTENUSE / ADJACENT SIDE; COTANGENT OF AN ANGLE = ADJACENT SIDE / OPPOSITE SIDE.	3	0	1	8	1	0	2	0					
0 206 DI-22 DO YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS.	3	0	6	0	2	0	4	0					
0 207 DI-23 DO YOU CALCULATE TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS.	2	4	2	0	8	15	6	9					
0 208 DI-24 DO YOU CALCULATE PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS.	1	0	1	0	5	8	2	9					
0 209 DI-25 DO YOU CALCULATE TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS.	1	4	1	0	8	15	8	4					
0 210 DI-26 DO YOU CALCULATE IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS.	1	4	0	0	5	15	2	4					
0 211 DI-27 DO YOU CALCULATE APPARENT POWER (PA) FOR SERIES RCL CIRCUITS.	1	4	0	3	6	15	6	0					
0 212 DI-28 DO YOU CALCULATE TRUE POWER (PT) FOR SERIES RCL CIRCUITS.	1	4	0	3	6	8	6	4					
0 213 DI-29 DO YOU CALCULATE POWER FACTORS (PF) FOR SERIES RCL CIRCUITS.	1	0	0	5	7	15	6	4					
0 214 DI-30 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RCL CIRCUITS.	1	4	0	0	7	0	10	4					
0 215 DI-31 DO YOU CALCULATE IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS.	0	0	0	0	3	8	2	4					
0 216 DI-32 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING THE ASSUMED VOLTAGE METHOD.	0	0	0	0	3	0	4	4					
0 217 DI-33 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING OHM'S LAW.	1	4	0	0	6	0	6	9					
0 218 DI-34 DO YOU CHECK CAPACITORS USING OHMMETERS.	27	12	28	37	32	23	35	30					
0 219 DI-35 DO YOU CHECK CAPACITORS USING SUBSTITUTION.	12	4	13	13	23	15	25	22					
0 220 DI-36 DO YOU CHECK INDUCTORS USING OHMMETERS.	24	12	23	37	28	8	31	30					
0 221 DI-37 DO YOU CHECK INDUCTORS USING SUBSTITUTION.	11	4	13	11	21	15	22	22					
0 222 DI-38 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE TANGENT OF AN ANGLE IS EQUAL TO THE OPPOSITE SIDE OVER THE ADJACENT SIDE, AND PARITY FOR RESONANT CIRCUITS.	1	0	0	3	0	0	0	0					
0 223 DI-39 DO YOU CALCULATE RESONANT FREQUENCIES FOR RCL CIRCUITS.	3	4	4	3	9	15	8	9					
0 224 DI-40 DO YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE	5	4	2	13	14	15	16	9					

DI-TSK

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task ID	Description	SPC 030	SPC 031	SPC 032	SPC 033	SPC 034	SPC 035	SPC 036	SPC 037
D 225	D1-H1 DO YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT	6	4	4	13	13	15	14	9
D 224	D1-H2 DO YOU USE OR REFER TO THE GENERAL RULE THAT HALF POWER POINTS ARE AT 70.7 PERCENT OF THE PEAK	19	19	17	24	22	38	20	17
D 227	D1-H3 DO YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO Q.	7	4	6	11	13	8	14	13
D 228	D1-H4 DO YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE, CAPACITANCE, OR INDUCTANCE WILL AFFECT	4	0	4	8	10	15	12	4
D 229	D2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH USE, OR REFER TO SERIES OR PARALLEL RESONANCE CIRCUITS OR	17	12	16	24	29	31	27	30
D 230	D2-02 DO YOU WORK WITH USE, OR REFER TO TIME CONSTANTS.	14	12	14	13	20	23	16	26
D 231	D2-03 DO YOU WORK WITH USE, OR REFER TO AVAILABLE VOLTAGE, INTERVALS.	7	0	8	8	8	8	6	13
D 232	D2-04 DO YOU WORK WITH USE, OR REFER TO TRANSIENT INTERVALS.	7	4	6	13	9	15	8	9
D 233	D2-05 DO YOU USE OR REFER TO THE GENERAL RULE THAT A CAPACITOR IS FULLY CHARGED (OR DISCHARGED) AFTER FIVE	10	4	11	13	17	31	14	17
D 234	D2-06 DO YOU USE OR REFER TO UNIVERSAL TIME CONSTANT CHARTS.	1	0	1	3	2	8	0	4
D 235	D2-07 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CIRCUITS CURRENT OR COMPONENT VOLTAGES AFTER A	1	4	0	3	6	8	4	9
D 236	D2-08 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE THE TIME REQUIRED FOR CIRCUIT CURRENT OR COMPONENT	3	0	2	8	8	15	8	4
D 237	D2-09 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE COMPONENT VALUES REQUIRED FOR CIRCUIT CURRENT AND	3	0	1	11	6	8	6	4
D 238	D2-10 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT IN LR CIRCUITS REACHES ITS MINIMUM VALUE (OR	5	0	6	5	13	31	8	13
D 239	D3-01 DO YOU WORK WITH CIRCUITS USED AS FILTERS ON YOUR PRESENT JOB.	51	50	52	50	71	62	75	70
D 240	D3-02 DO YOU INSPECT FILTER CIRCUITS.	47	46	46	50	51	38	59	39
D 241	D3-03 DO YOU CLEAN FILTER CIRCUITS.	22	12	27	18	26	23	33	13
D 242	D3-04 DO YOU ALIGN OR ADJUST FILTER CIRCUITS.	18	27	17	16	38	54	37	30
D 243	D3-05 DO YOU TROUBLESHOOT TO THE FILTER CIRCUIT.	37	23	39	42	46	38	95	52
D 244	D3-06 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF FILTER CIRCUITS.	21	4	20	34	31	31	29	35
D 245	D3-07 DO YOU REMOVE OR REPLACE THE COMPLETE FILTER CIRCUIT.	44	42	41	50	55	46	61	48

SERIES AND
PARALLEL RESONANCE
(TIME CONSTANTS)

FILTERS

YOUR SUMMARY
RELEVANT NUMBERS PERFORMING

SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
030	031	032	033	034	035	036	037	038	039	040	041	042	043	044	045
86	85	84	89	80	100	82	65								
DO YOU PERFORM SOLDERING TECHNIQUES OR INSPECT OR EVALUATE SOLDERED CONNECTIONS.															
64	58	65	66	60	54	67	48								SOLDERING
DO YOU SELECT TYPE OF SOLDER TO USE.															
72	58	78	68	78	85	82	65								
DO YOU ADD FLUX TO CONNECTIONS.															
74	69	77	71	77	85	80	65								
DO YOU CLEAN CONNECTIONS USING SOLVENTS.															
85	85	88	79	82	100	84	65								
DO YOU STRIP INSULATION FROM WIRES.															
73	62	77	74	75	85	74	61								
DO YOU CONNECT OR DISCONNECT HEAT SINKS.															
83	85	84	79	78	85	82	65								
DO YOU BEND OR SHAPE WIRES OR LEADS.															
85	85	88	79	80	92	84	65								
DO YOU CUT WIRES.															
82	81	86	76	74	77	74	65								
DO YOU FILE OR SHAPE SOLDERING IRON TIPS.															
83	81	87	76	78	85	82	65								
DO YOU CLEAN SOLDERING IRON TIPS.															
74	69	78	68	78	92	78	70								
DO YOU CLEAN ELECTRICAL SURFACES USING ERASERS.															
78	73	78	79	75	92	76	61								
DO YOU TIN OR PRE-TIN CONDUCTORS.															
84	81	84	84	78	92	80	65								
DO YOU INSPECT SOLDERED CONNECTIONS.															
67	62	71	61	74	92	75	61								
DO YOU DESOLDER CONNECTIONS BY WICKING.															
60	35	67	61	68	62	73	61								
DO YOU DESOLDER CONNECTIONS USING VACUUM DESOLDERING TOOLS.															
54	31	60	58	59	62	65	43								
DO YOU CUT COMPONENT LEADS TO REMOVE COMPONENTS.															
23	12	28	21	18	15	24	9								
DO YOU CRUSH COMPONENTS FOR REMOVAL.															
80	69	86	74	77	85	82	61								
DO YOU MAKE HARDWIRE CONNECTIONS.															
46	31	51	45	67	77	69	57								
DO YOU MAKE PRINTED CIRCUIT BOARD CONNECTIONS.															
51	38	57	47	63	77	63	57								
DO YOU SOLDER PASSIVE COMPONENTS SUCH AS RESISTORS OR CAPACITORS ON PRINTED CIRCUIT BOARDS.															
44	27	49	45	62	69	63	57								
DO YOU SOLDER ACTIVE COMPONENTS SUCH AS SOLID-STATE DIODES OR TRANSISTORS ON PRINTED CIRCUIT BOARDS.															
75	77	75	74	71	85	67	74								
DO YOU WORK WITH RELAYS ON YOUR PRESENT JOB.															
8	15	8	3	16	31	16	9								
DO YOU ADJUST RELAYS.															
27	23	31	21	37	31	41	30								
DO YOU CLEAN RELAYS.															
53	54	53	53	59	54	59	61								RELAYS
71	73	71	68	61	62	59	65								
DO YOU INSPECT RELAYS.															
5	8	5	3	8	23	6	4								
DO YOU REMOVE OR REPLACE COMPLETE RELAYS.															
59	46	63	61	62	54	61	70								
DO YOU REMOVE OR REPLACE PARTS OR RELAYS.															
27	23	29	24	21	31	16	26								
DO YOU TROUBLESHOOT RELAYS.															
16	12	14	24	15	23	12	17								
DO YOU STRAIGHTEN RELAY CONTACTS.															
3	0	4	3	2	15	0	0								
DO YOU PERFORM TASKS ON RELAY CONTACTS.															
3	0	5	3	3	15	0	4								
DO YOU PERFORM TASKS ON RELAY CORES.															
3	4	4	3	2	8	0	4								
DO YOU PERFORM TASKS ON RELAY COILS.															
4	4	4	5	3	8	2	4								
DO YOU PERFORM TASKS ON RELAY ARMATURES.															
50	54	57	63	56	46	57	61								
DO YOU PERFORM TASKS ON RELAY SPRINGS.															
DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY OPEN (NO) SCHEMATIC SYMBOLS FOR RELAYS.															
56	54	55	61	55	46	57	57								
DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY CLOSED (NC) SCHEMATIC SYMBOLS FOR RELAYS.															
56	54	54	63	55	54	53	61								
DO YOU USE OR REFER TO SINGLE POLE, DOUBLE THROW (SPDT) SCHEMATIC SYMBOLS FOR RELAYS.															
56	54	53	63	55	46	53	65								
DO YOU USE OR REFER TO DOUBLE POLE, DOUBLE THROW (DPDT) SCHEMATIC SYMBOLS FOR RELAYS.															

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC SPC SPC SPC SPC SPC SPC SPC
030 031 032 033 034 035 036 037

54 50 52 63 49 62 47 48

49 38 51 53 52 38 49 65

F 312 E3-18 DO YOU USE OR REFER TO OTHER RELAY SYMBOLS SCHEMATIC

F 313 E3-19 DO YOU CHECK ELECTRICAL CONTINUITY OF COILS BY

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

WITH MICROPHONES

F 315 F1-02 DO YOU INSPECT MICROPHONES

F 316 F1-03 DO YOU CLEAN MICROPHONES

F 317 F1-04 DO YOU OPERATE MICROPHONES

F 318 F1-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE

CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT

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

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

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

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

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

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

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

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

F 327 F2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING

WITH SPEAKERS

F 328 F2-02 DO YOU INSPECT SPEAKERS

F 329 F2-03 DO YOU CLEAN SPEAKERS

F 330 F2-04 DO YOU OPERATE SPEAKERS

F 331 F2-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE

CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT

F 332 F2-06 DO YOU TROUBLESHOOT DOWN TO SPEAKER PARTS

F 333 F2-07 DO YOU REMOVE OR REPLACE COMPLETE SPEAKERS

F 334 F2-08 DO YOU REMOVE OR REPLACE SPEAKER PARTS

F 335 F2-09 DO YOU PERFORM ANY TASKS ON SPEAKER CONES

F 336 F2-10 DO YOU PERFORM ANY TASKS ON SPEAKER SPIDERS

F 337 F2-11 DO YOU PERFORM ANY TASKS ON SPEAKER FIELD COILS

F 338 F2-12 DO YOU PERFORM ANY TASKS ON SPEAKER VOICE COILS

F 339 F2-13 DO YOU PERFORM ANY TASKS ON SPEAKER PERMANENT MAGNETS

F 340 F2-14 DO YOU PERFORM ANY TASKS ON SPEAKER ELECTROMAGNETS

F 341 F2-15 DO YOU PERFORM ANY TASKS ON SPEAKER SOFT IRON CORES

F 342 F3-01 DO YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB

F 343 F3-02 DO YOU USE OSCILLOSCOPES TO PERFORM OPERATIONAL

CHECKS

F 344 F3-03 DO YOU USE OSCILLOSCOPES TO PERFORM ALIGNMENTS OR

ADJUSTMENTS

F 345 F3-04 DO YOU USE OSCILLOSCOPES TO TROUBLESHOOT ELECTRONIC

CIRCUITS

F 346 F3-05 DO YOU USE OSCILLOSCOPES TO MEASURE FREQUENCY

F 347 F3-06 DO YOU USE OSCILLOSCOPES TO MEASURE TIME

MICROPHONES

SPEAKERS

OSCILLOSCOPES

1 0 1 3 3 0 4 4

1 0 1 3 1 0 0 4

1 0 1 3 2 0 2 4

1 0 1 0 1 0 0 4

1 0 1 0 0 0 0 0

1 0 1 3 1 0 0 4

1 0 0 3 1 0 0 0

0 0 0 1 0 2 0 0

0 0 0 1 0 1 0 0

0 0 0 0 0 0 0 0

1 0 1 0 2 6 0 4

0 0 0 0 1 0 0 0

0 0 0 0 7 15 2 13

0 0 0 0 3 0 2 9

0 0 0 0 3 0 2 9

0 0 0 0 7 15 2 13

0 0 0 0 3 8 2 4

0 0 0 0 0 0 0 0

0 0 0 0 2 8 2 0

0 0 0 0 0 0 0 0

0 0 0 0 0 0 0 0

0 0 0 0 1 8 0 0

0 0 0 0 0 0 0 0

0 0 0 0 1 8 0 0

0 0 0 0 0 0 0 0

0 0 0 0 0 0 0 0

0 0 0 0 0 0 0 0

0 0 0 0 0 0 0 0

93 88 94 87 95 85 100 91

86 77 89 87 91 77 94 91

78 69 82 76 89 85 92 83

78 69 81 76 90 85 92 87

83 81 84 82 84 77 90 83

84 73 89 79 92 85 98 83

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

BY-TASK

Task Description	SPC 030	SPC 031	SPC 032	SPC 033	SPC 034	SPC 035	SPC 036	SPC 037
F 348 F3-07 DO YOU USE OSCILLOSCOPES TO OBSERVE LISAJOUS PATTERNS	24	27	24	24	39	46	35	35
F 349 F3-08 DO YOU USE OSCILLOSCOPES TO OBSERVE SIGNALS WHILE UTILIZING ATTENUATOR PROBES	78	73	84	68	86	69	90	87
F 350 F3-09 DO YOU USE OSCILLOSCOPES TO MAKE FREQUENCY OR TIME MEASUREMENTS USING DELAY TIME MULTIPLIERS	53	38	55	58	57	69	55	57
F 351 F3-10 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE	86	81	90	82	90	92	92	83
F 352 F3-11 DO YOU USE OSCILLOSCOPES TO MEASURE OR OBSERVE SIGNALS AFTER FIRST ADJUSTING THE GAIN AND DC BAL CONTROLS	59	50	58	66	72	77	71	74
F 353 F3-12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE	86	77	90	82	92	85	96	87
G 354 G1-01 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT JOB	66	58	64	76	77	69	76	83
G 355 G1-02 DO YOU INSPECT DIODES	61	46	60	71	67	54	69	70
G 356 G1-03 DO YOU REMOVE OR REPLACE DIODES	52	38	53	61	57	46	55	70
G 357 G1-04 DO YOU CHECK DIODES USING AN INSTRUMENT	51	31	51	66	63	54	57	83
G 358 G1-05 DO YOU USE ENERGY LEVEL DIAGRAMS IN YOUR WORK WITH DIODES	1	0	0	3	3	0	6	0
G 359 G1-06 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES, TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE, TO COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR DIODES	1	0	1	0	2	0	2	4
G 360 G1-07 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR DIODES	5	0	5	8	16	31	12	17
G 361 G1-08 DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES	31	15	31	39	44	38	37	61
G 362 G1-09 DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO OTHER ELECTRONIC COMPONENTS, SUCH AS RESISTORS, BASED ON TEMPERATURE	49	35	47	63	60	46	59	70
G 363 G1-10 DO YOU REFER TO OR DO YOU DETERMINE THE GENERAL EFFECTS OF DOPING ON CURRENT FLOW	4	4	5	3	10	8	10	13
G 364 G1-11 DO YOU USE OR REFER TO MEASUREMENTS OF FORWARD BIAS RESISTANCE	31	23	33	34	46	38	45	52
G 365 G1-12 DO YOU USE OR REFER TO DIODE COLOR CODING	17	15	14	24	23	15	16	43
G 366 G1-13 DO YOU USE OR REFER TO CENTRIFUGAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS	0	0	0	0	1	0	2	0
G 367 G1-14 DO YOU USE OR REFER TO CENTRIPETAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS	0	0	0	0	1	0	2	0
G 368 G1-15 DO YOU USE OR REFER TO DIODE NUMBERING SYSTEMS, SUCH AS IN 5.38	36	15	39	45	43	31	39	57
G 369 G1-16 DO YOU USE OR REFER TO KINETIC ENERGY OF AN ELECTRON MOVING IN ORBIT	0	0	0	0	2	8	2	0
G 370 G1-17 DO YOU USE OR REFER TO POTENTIAL ENERGY OF AN ELECTRON MOVING IN ORBIT	0	0	0	0	1	0	2	0
G 371 G1-18 DO YOU USE OR REFER TO MEASUREMENTS OF REVERSE BIAS RESISTANCE	32	23	33	37	41	31	41	48
G 372 G1-19 DO YOU USE OR REFER TO NUMBER OF ELECTRONS IN A PARTICULAR SHELL OR ORBIT	1	4	0	0	1	0	2	0
G 373 G1-20 DO YOU USE OR REFER TO PERMISSIBLE ENERGY LEVELS OF AN ORBITING ELECTRON	0	0	0	0	0	0	0	0

SEMICONDUCTOR
DIODES

PCT MEMS ANSWRNG YES FOR 326X1 DAFSC GRPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

SPC SPC SPC SPC SPC SPC SPC SPC
030 031 032 033 034 035 036 037

374	61-21	DO YOU USE OR REFER TO FORBIDDEN ENERGY LEVELS OF AN ORBITING ELECTRON	0	0	0	0	0	0	0	0	0	0
375	61-22	DO YOU USE OR REFER TO VALENCE ELECTRONS (THOSE IN THE OUTERMOST SHELL)	1	4	0	0	3	0	6	0	0	0
376	61-23	DO YOU USE OR REFER TO ATOMIC NUMBER (TOTAL NUMBER OF ELECTRONS IN ATOM)	1	4	0	0	1	0	2	0	0	0
377	61-24	DO YOU USE OR REFER TO SYMBOLS ON THE DIODE WHICH INDICATE THE CATHODE END	47	31	49	53	60	46	53	83	0	0
378	61-25	DO YOU NEED TO KNOW WHICH MATERIALS ARE USED IN THE CONSTRUCTION OF DIODES SUCH AS GERMANIUM OR SILICON	7	8	6	11	7	0	4	17	0	0
379	61-26	DO YOU NEED TO KNOW THAT SEMICONDUCTORS HAVE NEGATIVE TEMPERATURE COEFFICIENTS OF RESISTANCE (AS TEMPERATURE INCREASES)	15	4	16	21	32	46	24	43	0	0
380	61-27	DO YOU USE OR REFER TO PN JUNCTION DIODE CHARACTERISTIC CURVES, SUCH AS VOLTAGE - CURRENT	1	0	0	3	11	0	14	13	0	0
381	61-28	DO YOU DETERMINE WHETHER PN JUNCTION DIODES ARE FORWARD BIASED OR REVERSE BIASED WHEN YOU READ OR CONSTRUCT A CIRCUIT	31	23	30	37	49	46	47	57	0	0
382	61-29	DO YOU USE OR REFER TO VALENCE BAND IN SEMICONDUCTOR MATERIALS	1	4	0	0	1	0	2	0	0	0
383	61-30	DO YOU USE OR REFER TO FORBIDDEN BAND IN SEMICONDUCTOR MATERIALS	0	0	0	0	1	8	0	0	0	0
384	61-31	DO YOU USE OR REFER TO CONDUCTION BAND IN SEMICONDUCTOR MATERIALS	0	0	0	0	0	0	0	0	0	0
385	61-32	DO YOU USE OR REFER TO COVALENT BONDING IN SEMICONDUCTOR MATERIALS	1	4	0	0	0	0	0	0	0	0
386	61-33	DO YOU USE OR REFER TO ELECTRON-HOLE PAIR CREATED IN SEMICONDUCTORS	1	4	0	0	0	0	0	0	0	0
387	61-34	DO YOU USE OR REFER TO ELECTRON FLOW OR HOLE FLOW IN SEMICONDUCTORS	5	4	5	5	8	0	8	13	0	0
388	61-35	DO YOU USE OR REFER TO DONOR IMPURITY IN SEMICONDUCTORS	1	0	0	3	0	0	0	0	0	0
389	61-36	DO YOU USE OR REFER TO ACCEPTOR IMPURITY IN SEMICONDUCTORS	1	0	0	3	0	0	0	0	0	0
390	61-37	DO YOU USE OR REFER TO P-TYPE SEMICONDUCTOR MATERIAL	10	0	10	16	17	15	14	26	0	0
391	61-38	DO YOU USE OR REFER TO N-TYPE SEMICONDUCTOR MATERIAL	10	0	11	16	17	15	14	26	0	0
392	61-39	DO YOU USE OR REFER TO MAJORITY CARRIERS IN SEMICONDUCTORS	2	4	1	3	2	8	2	0	0	0
393	61-40	DO YOU USE OR REFER TO MINORITY CARRIERS IN SEMICONDUCTORS	2	4	1	3	2	8	2	0	0	0
394	61-41	DO YOU USE OR REFER TO JUNCTION RECOMBINATION IN SEMICONDUCTORS	0	0	0	0	0	0	0	0	0	0
395	61-42	DO YOU USE OR REFER TO DEPLETION REGION IN SEMICONDUCTORS	4	4	5	3	2	0	2	4	0	0
396	61-43	DO YOU USE OR REFER TO RELATIONSHIP BETWEEN BARRIER WIDTH AND DIFFERENCE OF POTENTIAL	3	4	1	5	1	0	0	4	0	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task ID	Description	SPC 030	SPC 031	SPC 032	SPC 033	SPC 034	SPC 035	SPC 036	SPC 037
5 397	61-44 DO YOU USE OR REFER TO THE 10:1 BACK TO FRONT RESISTANCE RATIO FOR DIODES	31	27	27	45	57	38	55	74
5 398	61-45 DO YOU USE OR REFER TO BARRIER HEIGHT IN SEMICONDUCTORS	0	0	0	0	2	0	4	0
5 399	61-46 DO YOU USE OR REFER TO DIODE SUBSTITUTION INFORMATION	18	4	16	32	22	23	20	26
5 400	61-47 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD CURRENT DIODE RATINGS	4	4	2	8	13	8	10	22
5 401	61-48 DO YOU USE OR REFER TO PEAK RECURRENT FORWARD CURRENT DIODE RATINGS	3	4	2	5	9	8	8	13
5 402	61-49 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT DIODE RATINGS	4	4	2	8	15	8	10	30
5 403	61-50 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE DIODE RATINGS	7	8	5	11	17	8	14	30
5 404	62-01 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB.	65	42	66	76	71	62	67	87
5 405	62-02 DO YOU INSPECT TRANSISTORS	57	38	61	61	61	54	61	65
5 406	62-03 DO YOU REMOVE OR REPLACE TRANSISTORS	52	31	57	55	54	42	47	65
5 407	62-04 DO YOU CHECK TRANSISTORS USING AN INSTRUMENT	50	23	53	63	57	54	55	65
5 408	62-05 DO YOU USE OR REFER TO EMITTER - BASE (EB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	40	19	41	53	56	69	53	57
5 409	62-06 DO YOU USE OR REFER TO COLLECTOR - BASE (CB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	41	19	41	58	53	62	53	48
5 410	62-07 DO YOU USE OR REFER TO EMITTER - COLLECTOR (EC) RESISTANCE MEASUREMENTS	41	19	42	53	54	62	53	52
5 411	62-08 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE EMITTER - BASE JUNCTION	9	4	10	11	14	38	10	9
5 412	62-09 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE COLLECTOR - BASE JUNCTION	9	4	10	11	11	38	8	4
5 413	62-10 DO YOU USE OR REFER TO THE PHYSICAL SIZE OF THE TRANSISTOR STRUCTURE (COLLECTOR, BASE AND EMITTER) TRANSISTOR	17	4	16	29	21	38	14	22
5 414	62-11 DO YOU USE OR REFER TO LEAKAGE CURRENT (ICBO) IN A TRANSISTOR	7	4	6	13	11	38	10	0
5 415	62-12 DO YOU USE OR REFER TO TRANSISTOR SCHEMATIC SYMBOLS	58	38	60	66	71	69	69	78
5 416	62-13 DO YOU USE OR REFER TO TRANSISTOR NOTATION SUCH AS Q1, Q2, Q3, ETC	56	38	61	63	69	69	67	74
5 417	62-14 DO YOU USE OR REFER TO TRANSISTOR SUBSTITUTION INFORMATION	20	4	23	26	33	46	31	30
5 418	62-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE TRANSISTOR BASE CURRENT IB IS NORMALLY SIGNIFICANTLY	11	4	11	16	28	38	25	26
5 419	62-16 DO YOU USE THE INFORMATION THAT THE EFFECT OF EMITTER BASE VOLTAGE ON BASE CURRENT IS THE CONTROLLING FACTOR FOR	20	12	22	21	36	46	31	39
5 420	62-17 DO YOU USE THE GENERAL RULE THAT LEAKAGE CURRENT (ICBO) IN A TRANSISTOR INCREASES AS TEMPERATURE INCREASES	10	4	7	18	16	38	10	17
5 421	62-18 DO YOU USE OR REFER TO TRANSISTOR CHARACTERISTIC CURVES	3	4	2	5	7	0	8	9

TRANSISTORS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC SPC SPC SPC SPC SPC SPC SPC
030 031 032 033 034 035 036 037

DY-TSK

5 422	G2-19	DO YOU USE OR REFER TO BETA TRANSISTOR GAINS	5	4	2	11	8	8	10	4		
5 423	G2-20	DO YOU USE OR REFER TO ALPHA TRANSISTOR GAINS	5	4	2	11	8	8	10	4		
5 424	G2-21	DO YOU USE OR REFER TO GAMMA TRANSISTOR GAINS	4	4	2	8	7	6	8	4		
5 425	G2-22	DO YOU CALCULATE BETA TRANSISTOR GAINS	2	0	1	5	1	0	0	0		
5 426	G2-23	DO YOU CALCULATE ALPHA TRANSISTOR GAINS	2	0	1	5	1	0	0	0		
5 427	G2-24	DO YOU CALCULATE GAMMA TRANSISTOR GAINS	1	0	1	3	0	0	0	0		
5 428	G3-01	DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR PRESENT JOB	49	38	45	66	63	62	59	74		
5 429	G3-02	DO YOU INSPECT TRANSISTOR AMPLIFIERS	41	38	36	53	51	46	47	61		
5 430	G3-03	DO YOU ALIGN OR ADJUST TRANSISTOR AMPLIFIERS	31	23	28	42	56	54	49	74		TRANSISTOR AMPLIFIERS
5 431	G3-04	DO YOU TROUBLESHOOT TO THE AMPLIFIER CIRCUIT LEVEL	33	19	30	47	48	46	45	57		
5 432	G3-05	DO YOU TROUBLESHOOT TO AMPLIFIER COMPONENTS	19	8	17	32	36	46	31	39		
5 433	G3-06	DO YOU REMOVE OR REPLACE THE COMPLETE AMPLIFIER	44	38	36	63	46	46	45	57		
5 434	G3-07	DO YOU REMOVE OR REPLACE AMPLIFIER COMPONENTS	19	12	16	32	34	46	31	35		
5 435	G3-08	DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A CHANGE IN BASE	10	12	7	13	25	38	22	26		
5 436	G3-09	DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A CHANGE IN BASE	3	0	2	8	9	31	8	0		
5 437	G3-10	DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A CHANGE IN BASE	9	8	7	13	22	31	14	26		
5 438	G3-11	DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN BASE CURRENT WHICH RESULTS FROM AN INPUT SIGNAL	4	4	2	8	6	23	4	0		
5 439	G3-12	DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN BASE CURRENT WHICH RESULTS FROM AN INPUT SIGNAL	7	8	7	8	20	38	16	17		
5 440	G3-13	DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN CIRCUIT ANALYSIS (THIS METHOD REQUIRES YOU TO PLOT A (2) POINTS)	2	0	1	5	8	23	4	9		
5 441	G3-14	DO YOU USE THE LOAD-LINE METHOD OF ANALYSIS IN YOUR CIRCUIT ANALYSIS (THIS METHOD REQUIRES YOU TO PLOT A (2) POINTS) FOR A TRANSISTOR PARTICULAR TRANSISTOR	1	4	0	0	2	8	2	0		
5 442	G3-15	DO YOU USE OR REFER TO THE OPERATING POINT (2) POINTS) FOR A TRANSISTOR PARTICULAR TRANSISTOR	5	4	4	8	11	15	12	9		
5 443	G3-16	DO YOU CALCULATE THE SPECIFIC RUESCENT POINT FOR A PARTICULAR TRANSISTOR	1	4	0	3	2	8	2	0		
5 444	G3-17	DO YOU MEASURE VOLTAGE GAIN USED IN THE COMMON EMITTER CONFIGURATION	13	0	11	26	30	38	25	35		
5 445	G3-18	DO YOU MEASURE CURRENT GAIN USED IN THE COMMON EMITTER CONFIGURATION	7	0	5	18	22	31	24	13		
5 446	G3-19	DO YOU MEASURE POWER GAIN USED IN THE COMMON EMITTER CONFIGURATION	7	0	5	18	23	23	22	26		
5 447	G3-20	DO YOU CALCULATE THE VOLTAGE GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE	1	0	0	5	3	8	4	0		

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC 030	SPC 031	SPC 032	SPC 033	SPC 034	SPC 035	SPC 036	SPC 037
6 466 G3-39 DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS	17	4	17	26	26	38	24	26
6 467 G3-40 DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS	12	4	8	24	20	23	18	22
6 468 G3-41 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF PHASE DISTORTION	8	0	6	18	14	23	12	13
6 469 G3-42 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF FREQUENCY DISTORTION	12	0	11	21	21	31	18	22
6 470 G3-43 DO YOU NEED TO KNOW THE DEGENERATIVE EFFECTS ON THE CIRCUIT CAUSED BY CHANGING THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS	4	0	2	11	11	15	12	9
6 471 G3-44 DO YOU DETERMINE THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS	5	0	5	11	22	31	20	22
6 472 G3-45 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	11	8	5	26	11	15	10	13
6 473 G3-46 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	18	8	13	34	32	15	33	39
6 474 G3-47 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY CIRCUITS	12	8	10	18	18	15	20	17
6 475 G3-48 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	14	8	10	26	20	15	20	22
6 476 G3-49 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	16	8	12	32	29	23	27	35
6 477 H1-01 DO YOU USE OR REFER TO VARACTORS	8	8	5	16	22	23	25	13
6 478 H1-02 DO YOU USE OR REFER TO TUNNEL DIODES	26	15	18	50	64	38	69	70
6 479 H1-03 DO YOU USE OR REFER TO FIELD EFFECT TRANSISTORS (FET)	33	23	30	45	53	46	49	65
6 480 H1-04 DO YOU USE OR REFER TO UNIJUNCTION TRANSISTORS	33	27	27	50	52	38	51	61
6 481 H1-05 DO YOU USE OR REFER TO ZENER DIODES	56	50	52	71	80	69	80	87
6 482 H1-06 DO YOU USE OR REFER TO INTEGRATED CIRCUITS	73	58	70	89	94	92	96	91
6 483 H2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH POWER SUPPLIES	78	81	78	76	87	85	88	87
6 484 H2-02 DO YOU INSPECT POWER SUPPLIES	72	77	69	76	75	69	76	74
6 485 H2-03 DO YOU CLEAN POWER SUPPLIES	50	23	55	55	52	15	59	57
6 486 H2-04 DO YOU ALIGN OR ADJUST POWER SUPPLIES	68	62	71	66	86	92	84	87
6 487 H2-05 DO YOU TROUBLESHOOT TO POWER SUPPLY CIRCUIT LEVEL	57	46	60	58	77	77	78	74
6 488 H2-06 DO YOU TROUBLESHOOT TO POWER SUPPLY COMPONENTS	38	15	41	47	36	31	39	30
6 489 H2-07 DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES	74	77	70	82	83	85	82	83
6 490 H2-08 DO YOU REMOVE OR REPLACE POWER SUPPLY COMPONENTS	38	19	39	50	30	23	33	26
6 491 H2-09 DO YOU WORK WITH HALF-WAVE RECTIFIERS	42	35	42	47	49	31	49	61
6 492 H2-10 DO YOU WORK WITH FULL-WAVE RECTIFIERS OTHER THAN BRIDGE RECTIFIERS	47	38	45	58	52	38	53	57
6 493 H2-11 DO YOU WORK WITH BRIDGE RECTIFIERS	50	42	49	55	52	46	51	57
6 494 H2-12 DO YOU WORK WITH THREE-PHASE RECTIFIERS	34	23	34	42	44	23	51	39
6 495 H2-13 DO YOU USE OR REFER TO INPUT VOLTAGE	59	58	59	61	64	77	59	70
6 496 H2-14 DO YOU USE OR REFER TO INPUT FREQUENCY	44	46	42	45	52	69	45	57
6 497 H2-15 DO YOU USE OR REFER TO PEAK OUTPUT VOLTAGE	50	50	51	50	59	69	57	57
6 498 H2-16 DO YOU USE OR REFER TO AVERAGE OUTPUT VOLTAGE	50	50	48	53	54	54	55	52
6 499 H2-17 DO YOU USE OR REFER TO RIPPLE AMPLITUDE	46	46	43	53	45	46	39	57
6 500 H2-18 DO YOU USE OR REFER TO RIPPLE FREQUENCY	30	27	27	39	37	31	35	43

SOLID-STATE
SPECIAL PURPOSE
DEVICES

POWER SUPPLIES

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

TASK	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
030	031	032	033	034	035	036	037					
501 H2-19 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE	17	12	14	26	23	31	25	13				
502 H2-20 DO YOU USE OR REFER TO SHAPE OF OUTPUT WAVEFORMS	52	54	52	50	61	77	61	52				
503 H2-21 DO YOU USE OR REFER TO EFFECTIVE OUTPUT VOLTAGE	48	46	45	55	51	54	47	57				
504 H2-22 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE FILTERS	40	27	39	53	51	46	55	43				
505 H2-23 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE FILTERS	39	27	37	50	45	46	47	39				
506 H2-24 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE INPUT L-TYPE FILTERS	33	15	29	53	47	54	47	43				
507 H2-25 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE INPUT L-TYPE FILTERS	33	19	29	50	41	46	43	35				
508 H2-26 DO YOU WORK WITH CIRCUITS WHICH EMPLOY LC PI-TYPE FILTERS	33	12	30	53	45	46	47	39				
509 H2-27 DO YOU WORK WITH CIRCUITS WHICH EMPLOY RC PI-TYPE FILTERS	33	15	30	50	44	46	45	39				
510 H2-28 DO YOU WORK WITH CIRCUITS WHICH EMPLOY DON'T REMEMBER WHICH TYPE OF FILTER	39	50	42	24	36	46	33	35				
511 H2-29 DO YOU HAVE THE OPTION OF REPLACING ONE TYPE OF FILTER WITH A DIFFERENT TYPE FILTER	1	0	2	0	2	0	2	4				
512 H3-01 DO YOU WORK WITH OSCILLATORS IN YOUR PRESENT JOB	44	31	41	61	68	69	61	83				
513 H3-02 DO YOU INSPECT OSCILLATORS	34	23	30	50	57	54	55	65				
514 H3-03 DO YOU ALIGN OR ADJUST OSCILLATORS	33	27	25	55	56	62	51	65				
515 H3-04 DO YOU REMOVE OR REPLACE COMPLETE OSCILLATORS	35	27	31	50	59	62	55	65				OSCILLATORS
516 H3-05 DO YOU REMOVE OR REPLACE OSCILLATOR COMPONENTS	10	0	10	18	18	23	20	13				
517 H3-06 DO YOU TROUBLESHOOT TO OSCILLATOR CIRCUIT LEVEL	30	12	28	47	56	54	55	61				
518 H3-07 DO YOU TROUBLESHOOT TO OSCILLATOR COMPONENTS	10	0	7	24	22	23	24	17				
519 H3-08 DO YOU USE OR REFER TO FEEDBACK	25	19	23	34	43	46	37	52				
520 H3-09 DO YOU USE OR REFER TO FREQUENCY DETERMINING DEVICES (FDD)	21	19	16	34	40	38	35	52				
521 H3-10 DO YOU USE OR REFER TO AMPLITUDE STABILITY	22	19	18	34	40	38	39	43				
522 H3-11 DO YOU USE OR REFER TO FREQUENCY STABILITY	27	23	23	39	46	46	41	57				
523 H3-12 DO YOU USE OR REFER TO DAMPING	17	12	12	32	23	31	20	26				
524 H3-13 DO YOU USE OR REFER TO REGENERATIVE FEEDBACK	19	15	16	29	32	31	25	48				
525 H3-14 DO YOU USE OR REFER TO PIEZOELECTRIC EFFECT	7	8	6	11	8	15	8	4				
526 H3-15 DO YOU USE OR REFER TO CRITICAL DAMPING	6	4	4	13	10	15	10	9				
527 H3-16 DO YOU USE OR REFER TO UNDER DAMPING	7	4	2	18	13	15	10	17				
528 H3-17 DO YOU USE OR REFER TO OVER DAMPING	7	4	4	18	14	15	10	22				
529 H3-18 DO YOU WORK WITH OSCILLATORS WHICH USE LC TANK CIRCUITS AS FDD	20	12	20	26	32	31	31	35				
530 H3-19 DO YOU WORK WITH OSCILLATORS WHICH USE RC NETWORKS AS FDD	20	8	19	29	39	38	37	43				
531 H3-20 DO YOU WORK WITH OSCILLATORS WHICH USE CRYSTALS AS FDD	23	19	22	29	36	23	31	52				
532 H3-21 DO YOU WORK WITH OSCILLATORS WHICH USE DON'T REMEMBER WHICH TYPE OF FDD	18	23	14	21	20	31	22	9				
533 H3-22 DO YOU WORK WITH SERIES HARTLEY SINUSOIDAL OSCILLATORS	10	4	8	18	20	38	16	17				

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	030	031	032	033	034	035	036	037											
534 11-23 DO YOU WORK WITH SHUNT HARTLEY SINUSOIDAL OSCILLATORS	12	4	8	24	22	38	18	22											
535 11-24 DO YOU WORK WITH COLPITTS SINUSOIDAL OSCILLATORS	12	4	11	21	21	31	18	22											
536 11-25 DO YOU WORK WITH CLAPP SINUSOIDAL OSCILLATORS	6	4	5	11	10	15	8	13											
537 11-26 DO YOU WORK WITH BUTLER SINUSOIDAL OSCILLATORS	4	4	4	5	9	23	8	4											
538 11-27 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF OSCILLATORS	27	27	28	26	26	23	29	22											
539 11-01 DO YOU WORK WITH MULTIVIBRATORS IN YOUR PRESENT JOB	30	27	24	45	53	69	43	65											
540 11-02 DO YOU INSPECT WAVE GENERATING OR SHAPING CIRCUITS	24	23	17	39	40	46	41	35											
541 11-03 DO YOU ALIGN OR ADJUST WAVE GENERATING OR SHAPING CIRCUITS	18	15	12	34	48	62	43	52											
542 11-04 DO YOU CALIBRATE WAVE GENERATING OR SHAPING CIRCUITS	13	12	8	24	36	15	35	48											
543 11-05 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUITS	16	4	12	34	44	54	41	43											
544 11-06 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUIT COMPONENTS	8	0	7	16	24	38	24	17											
545 11-07 DO YOU REMOVE OR REPLACE COMPLETE WAVE GENERATING OR SHAPING CIRCUITS	23	23	17	37	43	62	39	39											
546 11-08 DO YOU REMOVE OR REPLACE WAVE GENERATING OR SHAPING COMPONENTS	7	0	6	13	18	23	18	17											
547 11-09 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK CIRCUITS	16	12	13	26	22	15	24	22											
548 11-10 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN RC NETWORKS	17	15	13	26	31	31	29	35											
549 11-11 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN CRYSTALS	15	12	12	24	23	31	20	26											
550 11-12 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN DON'T REMEMBER WHICH TYPE OF FDD	14	15	13	13	21	38	14	26											
551 11-13 DO YOU WORK WITH STABLE MULTIVIBRATORS	19	19	14	29	34	31	29	48											
552 11-14 DO YOU WORK WITH UNSTABLE MULTIVIBRATORS	19	19	14	29	36	31	29	52											
553 11-15 DO YOU WORK WITH BISTABLE MULTIVIBRATORS	18	19	13	29	39	38	29	61											
554 11-16 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE MULTIVIBRATORS	10	4	13	5	18	46	14	13											
555 12-01 DO YOU WORK WITH LIMITERS OR CLAMPERS IN YOUR PRESENT JOB	24	15	19	42	37	54	24	57											
556 12-02 DO YOU WORK WITH SERIES DIODE LIMITERS	14	8	10	29	25	23	20	39											
557 12-03 DO YOU WORK WITH SHUNT DIODE LIMITERS	13	8	10	24	21	23	14	35											
558 12-04 DO YOU WORK WITH LIMITERS WITH BIAS	13	8	10	24	16	23	12	22											
559 12-05 DO YOU WORK WITH ZENER DIODE LIMITERS	16	8	13	26	26	23	20	43											
560 12-06 DO YOU WORK WITH TRANSISTOR LIMITERS	14	8	11	24	24	23	18	39											
561 12-07 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF LIMITERS	10	8	10	13	17	38	10	22											
562 12-08 DO YOU WORK WITH BASIC DIODE CLAMPING CIRCUITS	13	8	10	24	17	0	14	30											
563 12-09 DO YOU WORK WITH DIODE CLAMPING CIRCUITS WITH BIAS	11	8	7	21	13	0	10	26											
564 12-10 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF CLAMPING CIRCUIT	11	8	10	16	22	36	12	35											
565 13-01 IN YOUR PRESENT JOB, DO YOU WORK ON EQUIPMENT WHICH CONTAINS ELECTRON TUBES	14	12	13	18	28	38	24	30											
566 13-02 DO YOU CHECK ELECTRON TUBES TO SEE IF THEY ARE GOOD	12	8	11	18	18	23	20	13											

LIMITERS AND CLAMPERS

MULTIVIBRATORS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DI-TSK	SPC Q30	SPC Q31	SPC Q32	SPC Q33	SPC Q34	SPC Q35	SPC Q36	SPC Q37
I 567 13-03 DO YOU USE TUBE TESTERS TO CHECK ELECTRON TUBES	3	4	1	8	2	0	2	4
I 568 13-04 DO YOU USE MULTIMETERS TO CHECK ELECTRON TUBES	7	4	7	11	15	15	12	22
I 569 13-05 DO YOU USE SCOPES TO CHECK ELECTRON TUBES	7	8	6	11	13	15	12	13
I 570 13-06 DO YOU USE SUBSTITUTION TO CHECK ELECTRON TUBES	11	8	7	21	20	38	14	22
I 571 13-07 DO YOU USE OR REFER TO CUTOFF	4	12	2	3	4	8	2	13
I 572 13-08 DO YOU USE OR REFER TO PEAK INVERSE VOLTAGE RATING	2	8	1	0	2	8	0	4
I 573 13-09 DO YOU USE OR REFER TO PEAK CURRENT RATING	1	8	0	0	3	8	2	4
I 574 13-10 DO YOU USE OR REFER TO TRANSIT TIME	2	8	1	0	2	0	2	4
I 575 13-11 DO YOU USE OR REFER TO PLATE DISSIPATION RATING	1	8	0	0	1	0	2	0
I 576 13-12 DO YOU USE OR REFER TO SATURATION	3	8	1	3	8	15	4	13
I 577 13-13 DO YOU USE OR REFER TO DC PLATE RESISTANCE	3	8	1	3	3	8	2	4
I 578 13-14 DO YOU COMPUTE ACTUAL VALUES OF THE DC PLATE RESISTANCE FOR ELECTRON TUBES	0	0	0	0	0	0	0	0
I 579 13-15 DO YOU USE OR REFER TO PLATE VOLTAGE	6	4	5	11	20	23	18	22
I 580 13-16 DO YOU USE OR REFER TO PLATE CURRENT	3	4	2	3	16	23	12	22
I 581 13-17 DO YOU USE OR REFER TO GRID VOLTAGE	5	4	4	11	21	31	18	22
I 582 13-18 DO YOU USE OR REFER TO GRID CURRENT	2	4	1	3	17	31	12	22
I 583 13-19 DO YOU USE OR REFER TO CATHODE VOLTAGE	7	8	5	11	20	31	16	22
I 584 13-20 DO YOU USE OR REFER TO CATHODE CURRENT	3	8	2	3	17	31	12	22
I 585 13-21 DO YOU USE OR REFER TO THE TRIODE AMPLIFICATION FACTOR (THE AMPLIFICATION FACTOR FOR TRIODES IS DEFINED AS	3	4	2	3	3	0	4	4
I 586 13-22 DO YOU CALCULATE ACTUAL VALUES OF TRIODE AMPLIFICATION FACTORS	0	0	0	0	0	0	0	0
I 587 13-23 DO YOU USE OR REFER TO MULTIGRID (TETRODE, PENTODE, ETC) AMPLIFICATION FACTORS	1	4	0	0	2	0	2	4
I 588 13-24 DO YOU USE OR REFER TO ELECTRON TUBE TRANSDUCTANCE (G, WHICH IS MEASURED IN MMOS)	1	4	0	0	1	0	2	0
I 589 13-25 DO YOU CALCULATE ACTUAL VALUES OF ELECTRON TUBE TRANSDUCTANCES	1	4	0	0	0	0	0	0
I 590 13-26 DO YOU USE OR REFER TO THE ELECTRON TUBE PARAMETER CALLED AC PLATE RESISTANCE	1	4	0	0	1	8	0	0
I 591 13-27 DO YOU CALCULATE ACTUAL VALUES OF AC PLATE RESISTANCE	1	4	0	0	1	8	0	0
I 592 13-28 DO YOU USE OR REFER TO ELECTRON TUBE INTERELECTRODE CAPACITANCE	2	4	1	3	5	8	2	9
I 593 13-29 DO YOU USE OR REFER TO CHARACTERISTIC CURVES IN YOUR WORK WITH ELECTRON TUBES	0	0	0	0	2	8	0	4
I 594 13-30 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE VOLTAGE FOR A SPECIFIED BIAS	1	0	1	0	1	0	0	4
I 595 13-31 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE CURRENT FOR A SPECIFIED BIAS	1	0	1	0	2	8	0	4
I 596 13-32 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR CUTOFF	0	0	0	0	3	8	0	9
I 597 13-33 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR SATURATION	0	0	0	0	2	8	0	4

ELECTRON TUBES

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task Description	SPC 030	SPC 031	SPC 032	SPC 033	SPC 034	SPC 035	SPC 036	SPC 037
1 599 13-34 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER GAIN EFFICIENCY	3	4	4	3	9	15	6	9
1 599 13-35 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER EFFICIENCY	1	4	0	0	6	15	4	4
1 600 13-36 DO YOU USE TEST TUBE CHECKERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	1	4	0	3	2	0	2	4
1 601 13-37 DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	4	4	2	8	8	15	6	9
1 602 13-38 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	5	0	5	8	13	15	10	17
1 603 13-39 DO YOU USE CHARACTERISTIC CURVES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	0	0	0	0	2	0	2	4
1 604 13-40 DO YOU CALCULATE ANY ELECTRON TUBE CAPACITANCES SUCH AS INPUT CAPACITANCE	0	0	0	0	0	0	0	0
1 605 13-41 DO YOU USE OR REFER TO TUBE SOCKET NOTATION	8	0	7	16	14	0	14	22
1 606 13-42 DO YOU USE OR REFER TO PIN NUMBERING SYSTEMS	11	4	11	16	16	15	16	17
1 607 13-43 DO YOU USE OR REFER TO THE TYPE OF MATERIAL OR THE OPERATING TEMPERATURE OF THE EMITTING SURFACE IN THE	0	0	0	0	2	8	2	0
1 608 13-44 DO YOU USE OR REFER TO TUBE SUBSTITUTION MATERIAL SUCH AS MANUALS OR CHARTS	3	0	1	8	7	8	6	9
J 609 J1-01 DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS IN YOUR PRESENT JOB	10	4	11	13	10	23	8	9
J 610 J1-02 DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER	0	0	0	0	3	8	2	4
J 611 J1-03 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	1	0	0	3	2	8	0	4
J 612 J1-04 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	1	0	0	3	3	0	4	4
J 613 J1-05 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	1	0	0	3	3	8	2	4
J 614 J1-06 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	1	0	0	3	5	8	4	4
J 615 J1-07 DO YOU TROUBLESHOOT OR REPAIR DON'T KNOW WHICH TYPE OF AMPLIFIER	5	0	6	8	6	23	2	4
J 616 J2-01 DO YOU WORK WITH GAS TUBES (HOT CATHODE OR COLD CATHODE)	6	4	5	11	5	8	4	4
J 617 J2-02 DO YOU WORK WITH CATHODE-RAY TUBES	29	23	29	34	33	54	29	30
J 618 J2-03 DO YOU USE OR REFER TO THE CHARACTERISTICS OF BEAM POWER TUBES	1	0	1	0	9	23	8	4
J 619 J2-04 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH BEAM POWER TUBES ARE USED	3	0	5	3	10	15	10	9
J 620 J2-05 DO YOU USE OR REFER TO THE CHARACTERISTICS OF THYRATONS	2	0	2	3	1	0	0	4
J 621 J2-06 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH THYRATONS ARE USED	3	0	2	5	2	8	0	4
J 622 J2-07 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTRON GUNS OF CATHODE-RAY TUBES (CRT)	16	4	14	26	24	62	16	22
J 623 J2-08 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROMAGNETIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES	14	4	14	18	18	38	12	22

ELECTRON TUBE
AMPLIFIERS
AND CIRCUITS

SPECIAL PURPOSE
ELECTRON TUBES

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task	SPC 030	SPC 031	SPC 032	SPC 033	SPC 034	SPC 035	SPC 036	SPC 037
J 624 J2-09 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES	10	0	10	18	13	15	10	17
J 625 J2-10 DO YOU USE OR REFER TO PHOSPHOR SCREENS	20	8	22	24	22	54	16	17
J 626 J2-11 DO YOU USE OR REFER TO ARIADAG COATINGS	13	8	11	21	13	38	8	9
J 627 J2-12 DO YOU USE OR REFER TO ELECTRON OPTICS	10	8	10	11	13	31	8	13
J 628 J2-13 DO YOU USE OR REFER TO PERSISTENCE	14	8	13	21	14	15	14	13
J 629 J2-14 DO YOU USE OR REFER TO DECAY TIMES	12	8	12	16	18	46	16	9
J 630 J2-15 DO YOU USE OR REFER TO FLUORESCENCE	10	8	11	11	14	23	12	13
J 631 J2-16 DO YOU USE OR REFER TO PHOSPHORESCENCE	12	8	12	13	11	23	12	4
J 632 J3-01 DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	49	54	43	58	78	77	76	83
J 633 J3-02 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	27	23	23	39	45	38	53	30
J 634 J3-03 DO YOU PERFORM TASKS ON FREQUENCY MIXERS	31	27	28	42	49	46	51	48
J 635 J3-04 DO YOU USE OR REFER TO THE HETERODYNING OF SIGNALS IN YOUR WORK WITH TRANSMIT OR RECEIVE SYSTEMS	19	15	16	29	38	46	41	26
J 636 J3-05 DO YOU PERFORM TASKS ON REACTANCE MODULATORS	18	12	17	24	14	15	18	4
J 637 J3-06 DO YOU PERFORM TASKS ON MODULATED OSCILLATORS	27	31	22	34	38	54	35	35
K 638 KI-01 DO YOU WORK ON AM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	12	12	11	16	28	23	25	35
K 639 KI-02 DO YOU INSPECT AM TRANSMIT OR RECEIVE SYSTEMS	12	12	10	16	26	23	25	30
K 640 KI-03 DO YOU CLEAN AM TRANSMIT OR RECEIVE SYSTEMS	8	4	6	16	23	23	20	30
K 641 KI-04 DO YOU ALIGN OR ADJUST AM TRANSMIT OR RECEIVE SYSTEMS	10	12	7	13	29	23	27	35
K 642 KI-05 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE SYSTEMS	9	12	6	13	25	23	24	30
K 643 KI-06 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE COMPONENTS	7	12	4	11	21	15	20	26
K 644 KI-07 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE SYSTEMS	9	12	7	11	24	15	24	30
K 645 KI-08 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE COMPONENTS	7	8	5	11	22	15	22	26
K 646 KI-09 DO YOU PERFORM TASKS ON RF OSCILLATORS	8	6	7	11	21	15	20	26
K 647 KI-10 DO YOU PERFORM TASKS ON RF AMPLIFIERS	6	4	5	11	23	23	20	30
K 648 KI-11 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	5	0	4	13	11	15	10	13
K 649 KI-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS	5	4	4	11	24	23	22	30
K 650 KI-13 DO YOU PERFORM TASKS ON LOCAL OSCILLATORS	6	8	7	11	18	15	20	17
K 651 KI-14 DO YOU PERFORM TASKS ON IF AMPLIFIERS	7	4	7	11	20	15	20	22
K 652 KI-15 DO YOU PERFORM TASKS ON DETECTORS	8	8	7	11	25	31	20	35
K 653 KI-16 DO YOU PERFORM TASKS ON DON'T REMEMBER WHICH AM STAGE	2	4	1	3	10	8	10	13
K 654 KI-17 DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN TRANSMITTERS	4	4	1	11	15	23	12	17
K 655 KI-18 DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN TRANSMITTERS	6	8	2	13	20	23	14	26
K 656 KI-19 DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS	9	8	7	13	25	31	22	30
K 657 KI-20 DO YOU USE OR REFER TO SELECTIVITY OF RECEIVERS	9	8	7	13	18	23	14	26
K 658 KI-21 DO YOU USE OR REFER TO 2ND HARMONIC DISTORTION	4	0	2	11	6	8	4	9
K 659 KI-22 DO YOU USE OR REFER TO BANDPASS DISTORTION	3	0	2	8	6	15	10	4
K 660 KI-23 DO YOU USE OR REFER TO SQUARE LAW DISTORTION	0	0	0	0	0	0	0	0

HETERODYNING,
MODULATION, AND
DEMODULATION

AM SYSTEMS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task ID	Description	SPC 030	SPC 031	SPC 032	SPC 033	SPC 034	SPC 035	SPC 036	SPC 037
K 661	K1-24 DO YOU USE OR REFER TO CO-CHANNEL INTERFERENCE	2	0	0	8	9	8	6	17
K 662	K1-25 DO YOU USE OR REFER TO IMAGE FREQUENCIES IN RECEIVERS	2	0	1	5	5	0	4	9
K 663	K1-26 DO YOU USE OR REFER TO SIGNAL TO IMAGE RATIOS OR IMAGE REJECTION RATIOS	2	0	1	5	7	0	6	13
K 664	K1-27 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM TRANSMITTER SCHEMATIC DIAGRAMS	7	12	6	8	24	15	24	30
K 665	K1-28 DO YOU TRACE SIGNALS OF CURRENT PATHS THROUGH AM RECEIVER SCHEMATIC DIAGRAMS	7	8	6	11	24	15	22	35
K 666	K2-01 DO YOU WORK WITH FM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	16	15	16	18	28	36	24	30
K 667	K2-02 DO YOU INSPECT FM TRANSMIT OR RECEIVE SYSTEMS	17	15	14	24	24	31	20	30
K 668	K2-03 DO YOU CLEAN FM TRANSMIT OR RECEIVE SYSTEMS	11	12	8	16	21	31	12	35
K 669	K2-04 DO YOU ALIGN FM TRANSMIT OR RECEIVE SYSTEMS	15	15	11	24	26	38	20	35
K 670	K2-05 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE SYSTEMS	12	15	10	13	26	38	20	35
K 671	K2-06 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE COMPONENTS	11	12	6	21	21	31	16	26
K 672	K2-07 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE SYSTEMS	11	15	10	11	24	36	18	30
K 673	K2-08 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE COMPONENTS	10	15	6	16	18	38	14	17
K 674	K2-09 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	7	8	4	16	10	31	4	13
K 675	K2-10 DO YOU PERFORM TASKS ON FREQUENCY MULTIPLIERS	7	12	5	11	18	31	12	26
K 676	K2-11 DO YOU PERFORM TASKS ON DRIVERS (INTERMEDIATE AMPLIFIERS)	9	15	6	11	21	31	14	30
K 677	K2-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS	10	15	7	13	24	38	18	30
K 678	K2-13 DO YOU PERFORM TASKS ON RF AMPLIFIERS	11	15	8	13	23	38	16	30
K 679	K2-14 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	7	15	4	11	21	38	14	26
K 680	K2-15 DO YOU PERFORM TASKS ON IF AMPLIFIERS	12	15	10	16	18	31	14	22
K 681	K2-16 DO YOU PERFORM TASKS ON LIMITERS	7	12	4	11	17	31	12	22
K 682	K2-17 DO YOU PERFORM TASKS ON FREQUENCY DISCRIMINATORS	7	12	5	11	18	38	12	22
K 683	K2-18 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSMITTERS	12	15	8	18	24	31	18	35
K 684	K2-19 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM RECEIVERS	11	12	8	16	23	31	16	35
K 685	K3-01 DO YOU CONVERT DECIMAL (BASE 10) NUMBERS TO OCTAL (BASE 8) NUMBERS	22	15	23	26	8	15	4	13
K 686	K3-02 DO YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2) NUMBERS	25	15	27	29	29	23	31	26
K 687	K3-03 DO YOU CONVERT OCTAL NUMBERS TO DECIMAL NUMBERS	20	15	20	21	6	15	4	4
K 688	K3-04 DO YOU CONVERT OCTAL NUMBERS TO BINARY NUMBERS	21	15	20	26	6	15	4	4
K 689	K3-05 DO YOU CONVERT BINARY NUMBERS TO DECIMAL NUMBERS	24	15	28	24	28	15	33	22
K 690	K3-06 DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS	22	15	22	24	5	8	4	4
K 691	K3-07 DO YOU ADD BINARY NUMBERS TO GET A SUM	19	8	20	24	20	15	24	13
K 692	K3-08 DO YOU SUBTRACT BINARY NUMBERS USING THE END-AROUND-CARRY METHOD	11	0	12	16	9	18	12	4
K 693	K3-09 DO YOU SUBTRACT BINARY NUMBERS USING THE DIRECT SUBTRACTION METHOD	14	4	19	18	13	8	18	4

FM SYSTEMS

NUMBERING SYSTEMS

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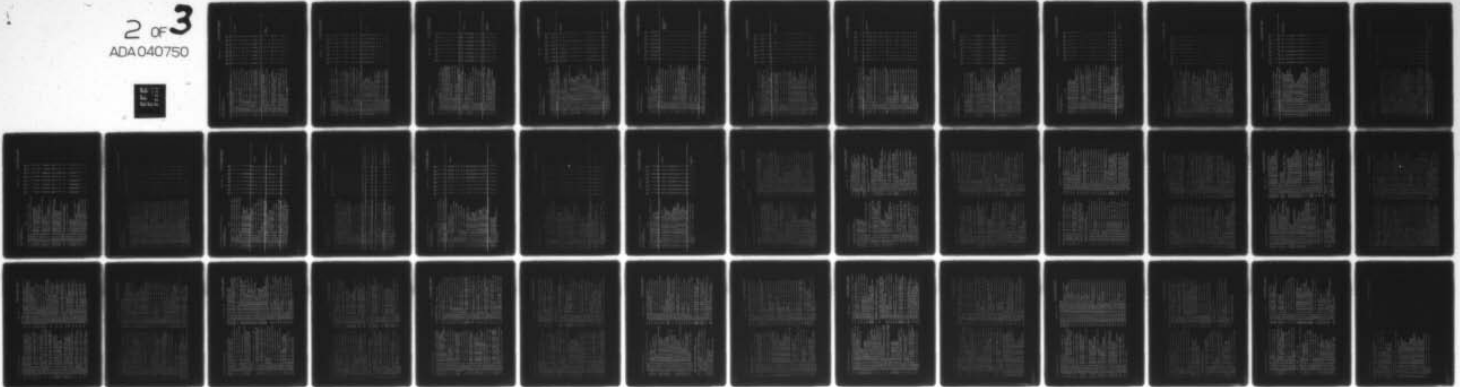
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ELECTRONICS PRINCIPLES OCCUPATIONAL SURVEY REPORT, INTEGRATED A--ETC(U)
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TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	030	031	032	033	034	035	036	037					
L 694 A3-10 DO YOU ADD OCTAL NUMBERS TO GET A SUM	11	8	10	16	3	8	4	0					
L 695 L1-7 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS	28	19	29	32	71	62	67	87					
L 696 L1-02 DO YOU CONSTRUCT TRUTH TABLES FOR AND LOGIC SYMBOLS	10	4	12	11	29	8	33	30					LOGIC FUNCTIONS
L 697 L1-03 DO YOU CONSTRUCT TRUTH TABLES FOR OR LOGIC SYMBOLS	10	4	12	11	29	8	33	30					
L 698 L1-04 DO YOU CONSTRUCT TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS	10	4	12	11	29	8	33	30					
L 699 L1-05 DO YOU CONSTRUCT TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS OR GATES	10	4	11	11	29	8	33	30					
L 700 L1-06 DO YOU USE OR REFER TO TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES	16	8	19	16	51	46	51	52					
L 701 K1-07 DO YOU USE OR REFER TO TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES	16	8	19	13	52	54	51	52					
L 702 K1-08 DO YOU USE OR REFER TO TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS	15	4	18	16	52	54	51	52					
L 703 L1-09 DO YOU USE OR REFER TO TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS	15	8	18	13	52	54	51	52					
L 704 L1-10 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR AND GATES	25	15	28	26	66	62	63	74					
L 705 L1-11 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR OR GATES	25	15	28	26	66	62	63	74					
L 706 L1-12 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR NAND OR NOR GATES	25	15	28	26	64	62	63	70					
L 707 L1-13 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR EXCLUSIVE OR GATES	24	15	27	26	63	62	61	70					
L 708 L2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS	7	4	7	11	18	0	20	26					
L 709 L2-02 DO YOU DRAW LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUITS	3	0	2	8	10	0	14	9					BOOLEAN EQUATIONS
L 710 L2-03 DO YOU CONSTRUCT TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS	2	0	1	5	6	8	6	4					
L 711 L2-04 DO YOU DRAW LOGIC DIAGRAMS FROM GIVEN BOOLEAN EQUATIONS	3	8	1	5	10	15	12	4					
L 712 L2-05 DO YOU MEASURE INPUTS OR OUTPUTS OF LOGIC GATES	14	8	13	18	34	15	37	39					
L 713 L2-06 DO YOU DEVELOP OR ANALYZE BOOLEAN EQUATIONS IN THE PROCESS OF TROUBLESHOOTING DIGITAL CIRCUITS	6	8	2	13	13	8	14	13					
L 714 L2-07 DO YOU ANALYZE LOGIC CIRCUITS BY USING BOOLEAN ALGEBRA	8	8	5	16	20	31	14	26					
L 715 L2-08 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUIT GATES	12	4	8	24	18	15	20	17					
L 716 L2-09 DO YOU USE OR REFER TO TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS	5	4	4	11	11	15	12	9					
L 717 L2-10 DO YOU USE OR REFER TO LOGIC DIAGRAMS CONSISTING OF MORE THAN ONE GATE	17	12	12	32	40	31	41	43					
L 718 L2-11 DO YOU COMPUTE SUM AND CARRY EXPRESSIONS FOR SERIAL HALF OR FULL ADDER LOGIC DIAGRAMS	3	4	1	5	10	8	6	17					

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DTASK	SPC 030	SPC 031	SPC 032	SPC 033	SPC 034	SPC 035	SPC 036	SPC 037
L 719 L2-12 DO YOU TRACE DATA FLOW THROUGH PARALLEL FULL ADDER LOGIC DIAGRAMS	6	8	2	13	16	15	22	13
L 720 L2-13 DO YOU WORK WITH ASTABLE (FREE RUNNING) MULTIVIBRATORS	14	12	12	21	26	38	33	39
L 721 L2-14 DO YOU WORK WITH BISTABLE (FLIP-FLOP) MULTIVIBRATORS	17	19	13	24	41	38	41	43
L 722 L2-15 DO YOU WORK WITH MONOSTABLE (ONE-SHOT) MULTIVIBRATORS	15	12	13	21	39	38	37	43
L 723 L2-16 DO YOU USE OR REFER TO FLIP-FLOP MULTIVIBRATOR SYMBOLS	16	15	13	24	38	31	35	48
L 724 L2-17 DO YOU USE OR REFER TO SINGLE-SHOT MULTIVIBRATOR SYMBOLS	14	8	13	21	38	38	35	43
L 725 L2-18 DO YOU USE OR REFER TO FLIP-FLOP CIRCUIT DIAGRAMS	16	8	16	24	37	38	33	43
L 726 L2-19 DO YOU USE OR REFER TO FLIP-FLOP TRUTH TABLES	11	8	10	16	23	38	20	22
L 727 L2-20 DO YOU USE OR REFER TO COMPLEMENTED FLIP-FLOP LOGIC SYMBOLS	11	8	10	16	23	36	18	26
L 728 L2-21 DO YOU USE OR REFER TO COMPLEMENTING FLIP-FLOP LOGIC SYMBOLS	10	8	8	16	24	38	18	30
L 729 L2-22 DO YOU MEASURE OUTPUT WAVESHAPES OF LOGIC CIRCUITS	17	15	13	26	40	38	37	48
L 730 L2-23 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTED FLIP-FLOP SCHEMATIC DIAGRAMS	12	12	10	16	29	38	27	26
L 731 L2-24 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTING FLIP-FLOP SCHEMATIC DIAGRAMS	10	12	7	16	29	38	25	30
L 732 L2-25 DO YOU CONSTRUCT TRUTH TABLES FOR J-K FLIP-FLOP LOGIC SYMBOLS	3	4	2	3	11	15	12	9
L 733 L3-01 DO YOU WORK WITH DIGITAL COUNTERS IN YOUR PRESENT JOB	29	19	31	32	54	54	53	57
L 734 L3-02 DO YOU USE OR REFER TO UP-COUNTERS	24	15	27	24	46	38	43	57
L 735 L3-03 DO YOU USE OR REFER TO DOWN-COUNTERS	21	15	23	21	43	23	43	52
L 736 L3-04 DO YOU USE OR REFER TO SERIAL COUNTERS	20	15	19	24	22	23	18	30
L 737 L3-05 DO YOU USE OR REFER TO PARALLEL COUNTERS	20	15	19	24	20	15	16	30
L 738 L3-06 DO YOU USE OR REFER TO RING COUNTERS	8	8	10	5	10	15	10	9
L 739 L3-07 DO YOU USE OR REFER TO DECADE COUNTERS	14	12	16	11	33	23	33	39
L 740 L3-08 DO YOU USE OR REFER TO COUNT DETECT CIRCUITS	18	15	19	18	26	31	22	35
L 741 L3-09 DO YOU USE OR REFER TO DOWN CLOCKS	18	15	20	16	32	15	31	43
L 742 L3-10 DO YOU USE OR REFER TO UP CLOCKS	19	15	20	18	36	38	33	39
L 743 L3-11 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	9	4	10	11	28	23	33	22
L 744 L3-12 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-FLOPS	7	4	7	8	22	23	22	22
L 745 L3-13 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF DECADE COUNTERS	8	4	8	11	28	15	27	35
L 746 L3-14 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF RING COUNTERS	4	0	6	3	8	15	8	4
L 747 L3-15 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER	9	4	8	13	16	15	20	17
L 748 L3-16 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	12	8	10	18	25	15	22	39

COUNTERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DI-TSK	SPC 030	SPC 031	SPC 032	SPC 033	SPC 034	SPC 035	SPC 036	SPC 037
L 749 L3-17 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF COUNTERS	9	0	10	13	21	6	22	26
L 750 L3-18 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	6	4	8	3	16	23	14	17
L 751 L3-19 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENT- PULSES FOR SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE	5	4	6	3	16	31	10	22
L 752 L3-20 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR OTHER TYPES OF COUNTERS	5	4	6	3	10	15	8	13
L 753 L3-21 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR OTHER TYPES OF COUNTERS	5	0	7	3	14	8	12	22
L 754 L3-22 DO YOU CONSTRUCT TRUTH TABLES FROM LOGIC DIAGRAMS OF DECADE COUNTERS	2	4	2	0	3	0	6	0
L 755 L3-23 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP IN RING COUNTERS FOR SPECIFIC INPUT PULSES	2	0	4	0	8	8	8	9
L 756 L3-24 DO YOU DETERMINE THE APPROPRIATE AND GATE NECESSARY IN COUNT DETECT CIRCUITS TO INDICATE A REQUIRED COUNT	5	4	6	5	14	8	14	17
M 757 M1-01 DO YOU WORK WITH SAWTOOTH WAVE GENERATORS	43	42	42	45	69	69	65	78
M 758 M1-02 DO YOU WORK WITH TRAPEZOIDAL WAVE GENERATORS	22	19	23	21	32	31	33	30
M 759 M1-03 DO YOU WORK WITH PULSED OSCILLATORS WITH REGENERATIVE FEEDBACK	27	27	24	32	39	54	39	30
M 760 M1-04 DO YOU WORK WITH PULSED OSCILLATORS WITHOUT REGENERATIVE FEEDBACK	22	19	27	16	37	31	43	26
M 761 M1-05 DO YOU WORK WITH BLOCKING OSCILLATORS	24	19	24	29	39	54	37	35
M 762 M1-06 DO YOU USE OR REFER TO RISE TIME	68	54	71	71	85	77	90	78
M 763 M1-07 DO YOU USE OR REFER TO FALL OR FLYBACK TIME	63	50	69	61	70	54	75	70
M 764 M1-08 DO YOU USE OR REFER TO SWEEP TIME	67	58	70	64	82	85	84	74
M 765 M1-09 DO YOU USE OR REFER TO ELECTRICAL LENGTH OF SAWTOOTH WAVEFORMS	52	42	51	61	51	54	49	52
M 766 M1-10 DO YOU USE OR REFER TO PHYSICAL LENGTH OF SAWTOOTH WAVEFORMS	50	35	49	61	55	69	57	43
M 767 M1-11 DO YOU USE OR REFER TO LINEAR SLOPE OF SAWTOOTH WAVEFORMS	41	23	41	55	45	46	37	57
M 768 M1-12 DO YOU USE OR REFER TO GATE LENGTH OF SAWTOOTH WAVEFORMS	39	27	41	45	43	54	45	30
M 769 M2-01 DO YOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB	36	46	34	34	76	85	75	74
M 770 M2-02 DO YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL GENERATORS	32	46	24	39	62	69	61	61
M 771 M2-03 DO YOU PERFORM PERIODIC MAINTENANCE SUCH AS ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL GENERATORS	14	19	13	13	32	54	27	30
M 772 M2-04 DO YOU TROUBLESHOOT TO AN ASSEMBLY OR SUBASSEMBLY WHILE USING SIGNAL GENERATORS	23	31	20	24	38	38	35	43
M 773 M2-05 DO YOU TROUBLESHOOT TO THE SMALLEST REPLACEABLE COMPONENT WHILE USING SIGNAL GENERATORS	6	0	5	5	15	8	16	17
M 774 M2-06 DO YOU USE AUDIO SINE-WAVE GENERATORS	19	19	16	26	22	31	24	13

TIMING CIRCUITS

USE OF SIGNAL GENERATORS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC SPC SPC SPC SPC SPC SPC SPC

030 031 032 033 034 035 036 037

20 23 18 21 33 31 35 30

- M 775 M2-07 DO YOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH AS SQUARE WAVE, TRIANGLE, PULSER, OR SPIKE
- M 776 M2-08 DO YOU USE RF GENERATORS LESS THAN 1,000 MH
- M 777 M2-09 DO YOU USE HF GENERATORS GREATER THAN 1,000 MH
- M 778 M2-10 DO YOU USE OTHER SPECIAL PURPOSE OR MULTI-FUNCTION GENERATORS

- M 779 M3-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS OR

- M 780 M3-02 DO YOU INSPECT MOTORS
- M 781 M3-03 DO YOU CLEAN OR LUBRICATE MOTORS
- M 782 M3-04 DO YOU OPERATE MOTORS
- M 783 M3-05 DO YOU REMOVE OR REPLACE COMPLETE MOTORS
- M 784 M3-06 DO YOU REMOVE OR REPLACE MOTOR PARTS
- M 785 M3-07 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF MOTORS

- M 786 M3-08 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS

- M 787 M3-09 DO YOU PERFORM ANY TASKS ON FIELD COILS
- M 788 M3-10 DO YOU PERFORM ANY TASKS ON ARMATURES
- M 789 M3-11 DO YOU PERFORM ANY TASKS ON ROTORS
- M 790 M3-12 DO YOU PERFORM ANY TASKS ON BRUSHES
- M 791 M3-13 DO YOU PERFORM ANY TASKS ON SLIP RINGS
- M 792 M3-14 DO YOU PERFORM ANY TASKS ON COMPUTATORS
- M 793 M3-15 DO YOU PERFORM ANY TASKS ON POLE PIECES

- M 794 M3-16 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OF THE FORCE OR TORQUE CREATED BY A MOTOR

- M 795 M3-17 DO YOU DETERMINE OR MEASURE THE DIRECTION OF THE MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR

- M 796 M3-18 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OR DIRECTION OF THE INDUCED VOLTAGE IN MOTORS

- M 797 M3-19 DO YOU WORK WITH SYNCHRONOUS MOTORS

- M 798 M3-20 DO YOU WORK WITH INDUCTION MOTORS

- M 799 M3-21 DO YOU WORK WITH SPLIT-PHASE MOTORS

- M 800 M3-22 DO YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS

- M 801 M3-23 DO YOU CLEAN OR LUBRICATE GENERATORS

- M 802 M3-24 DO YOU OPERATE GENERATORS

- M 803 M3-25 DO YOU REMOVE OR REPLACE COMPLETE GENERATORS

- M 804 M3-26 DO YOU REMOVE OR REPLACE GENERATOR PARTS

- M 805 M3-27 DO YOU REMOVE OR REPLACE GENERATOR PARTS

- M 806 M3-28 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF GENERATORS

- M 807 M3-29 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF GENERATORS

- M 808 M1-01 DO YOU WORK WITH METERS IN YOUR PRESENT JOB

- M 809 M1-02 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF PERMANENT MAGNETS

- M 810 M1-03 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF MOVING COILS

MOTORS AND
GENERATORS

METER MOVEMENTS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DTASK	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
0 538 N3-J5 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)	42	31	42	50	75	77	75	74				
0 539 N3-06 DO YOU USE OR REFER TO DIFFERENTIATING CIRCUITS	24	19	22	34	53	46	57	48				
0 540 N3-07 DO YOU USE OR REFER TO INTEGRATING CIRCUITS	32	23	31	39	63	69	63	61				
0 541 N3-08 DO YOU USE OR REFER TO THE CLASSIFICATION OF TIME CONSTANTS (TCT) AS LONG, MEDIUM, OR SHORT	20	19	18	26	28	54	22	26				
0 542 N3-09 DO YOU DETERMINE WHETHER AN LC OR RC CIRCUIT IS DIFFERENTIATING OR INTEGRATING BASED ON THE TIME CONSTANT	6	4	7	5	13	23	12	9				
0 543 N3-10 DO YOU WORK WITH SQUARE WAVE GENERATORS	35	42	29	45	67	77	65	65				
0 544 N3-11 DO YOU WORK WITH RECTANGULAR WAVE GENERATORS	29	27	24	39	53	49	47	57				
0 545 01-01 DO YOU WORK ON SINGLE SIDEBAND SYSTEMS IN YOUR PRESENT JOB	7	4	2	0	7	31	2	4				
0 546 01-02 DO YOU INSPECT SSB TRANSMIT OR RECEIVE SYSTEMS	1	0	1	0	3	15	0	4				
0 547 01-03 DO YOU CLEAN SSB TRANSMIT OR RECEIVE SYSTEMS	0	0	0	0	2	6	0	4				
0 548 01-04 DO YOU ALIGN SSB TRANSMIT OR RECEIVE SYSTEMS	1	0	1	0	3	15	0	4				
0 549 01-05 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE SYSTEMS	1	0	1	0	3	15	0	4				
0 550 01-06 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE COMPONENTS	0	0	0	0	3	15	0	4				
0 551 01-07 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE SYSTEMS	1	0	1	0	3	15	0	4				
0 552 01-08 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE COMPONENTS	0	0	0	0	3	15	0	4				
0 553 01-09 DO YOU PERFORM TASKS ON SSB AUDIO AMPLIFIERS	0	0	0	0	2	8	0	4				
0 554 01-10 DO YOU PERFORM TASKS ON SSB BALANCED MODULATORS	0	0	0	0	2	8	0	4				
0 555 01-11 DO YOU PERFORM TASKS ON SSB CARRIER OSCILLATORS	0	0	0	0	1	0	0	4				
0 556 01-12 DO YOU PERFORM TASKS ON SSB LC FILTERS	0	0	0	0	1	0	0	4				
0 557 01-13 DO YOU PERFORM TASKS ON SSB CRYSTAL FILTERS	0	0	0	0	1	0	0	4				
0 558 01-14 DO YOU PERFORM TASKS ON SSB MECHANICAL FILTERS	0	0	0	0	0	0	0	4				
0 559 01-15 DO YOU PERFORM TASKS ON SSB OSCILLATORS	0	0	0	0	2	8	0	4				
0 560 01-16 DO YOU PERFORM TASKS ON SSB MIXERS	1	0	1	0	1	0	0	4				
0 561 01-17 DO YOU PERFORM TASKS ON SSB DRIVERS	1	0	1	0	2	8	0	4				
0 562 01-18 DO YOU PERFORM TASKS ON SSB POWER AMPLIFIERS	1	0	1	0	2	8	0	4				
0 563 01-19 DO YOU PERFORM TASKS ON SSB RF AMPLIFIERS	1	0	1	0	2	8	0	4				
0 564 01-20 DO YOU PERFORM TASKS ON SSB FREQUENCY CONVERTERS	0	0	0	0	2	8	0	4				
0 565 01-21 DO YOU PERFORM TASKS ON SSB IF AMPLIFIERS	1	0	1	0	2	8	0	4				
0 566 01-22 DO YOU PERFORM TASKS ON SSB DEMODULATORS	0	0	0	0	2	8	0	4				
0 567 01-23 DO YOU PERFORM TASKS ON SSB DON'T REMEMBER WHICH SSB SYSTEM STAGES	0	0	0	0	3	23	0	0				
0 568 01-24 DO YOU USE OR REFER TO SELECTIVE FADING	0	0	0	0	0	0	0	0				
0 569 01-25 DO YOU USE OR REFER TO PEAK POWER	0	0	0	0	3	15	0	4				
0 570 01-26 DO YOU USE OR REFER TO FREQUENCY STABILITY	0	0	0	0	0	0	0	0				
0 571 01-27 DO YOU USE OR REFER TO RESPONSE CURVES FOR BANDWIDTH FILTERS	0	0	0	0	0	0	0	0				
0 572 01-28 DO YOU CALCULATE PEAK POWER OR EFFECTIVE POWER OF SSB TRANSMITTERS	0	0	0	0	0	0	0	0				

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC SPC SPC SPC SPC SPC SPC SPC
030 031 032 033 034 035 036 037

1 0 1 0 2 8 0 4

1 0 1 0 2 8 0 4

22 23 23 21 57 77 55 52

PULSE MODULATION SYSTEMS

0 873 01-29 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH 5SB TRANSMITTER SCHEMATIC DIAGRAMS

0 874 01-30 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH 5SB RECEIVER SCHEMATIC DIAGRAMS

0 875 02-01 DO YOU WORK ON PULSE MODULATION SYSTEMS IN YOUR PRESENT JOB

0 876 02-02 DO YOU INSPECT PULSE MODULATION SYSTEMS

0 877 02-03 DO YOU CLEAN PULSE MODULATION SYSTEMS

0 878 02-04 DO YOU ALIGN PULSE MODULATION SYSTEMS

0 879 02-05 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS

0 880 02-06 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEM COMPONENTS

0 881 02-07 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS COMPONENTS

0 882 02-08 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEM COMPONENTS

0 883 02-09 DO YOU WORK ON PULSE-AMPLITUDE MODULATION (PAM) SYSTEMS

0 884 02-10 DO YOU WORK ON PULSE-DURATION MODULATION (PDM) SYSTEMS

0 885 02-11 DO YOU WORK ON PULSE-POSITION MODULATION (PPM) SYSTEMS

0 886 02-12 DO YOU WORK ON PULSE-CODE MODULATION (PCM) SYSTEMS

0 887 02-13 DO YOU WORK ON LINE PULSING MODULATION SYSTEMS

0 888 02-14 DO YOU WORK ON DON'T REMEMBER WHICH TYPE OF MODULATION SYSTEM

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

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

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

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

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

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

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

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

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

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

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

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DA-TSK	SPC 030	SPC 031	SPC 032	SPC 033	SPC 034	SPC 035	SPC 036	SPC 037
0 900 02-26 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM VIDEO AMPLIFIERS	17	15	16	21	36	23	39	35
0 901 02-27 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER VIDEO AMPLIFIERS	12	12	13	11	26	15	33	17
0 902 02-28 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM SONYT REMEMER WHICH PULSE MODULATION SYSTEM STAGES	5	4	7	3	15	31	14	9
0 903 02-29 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)	19	15	18	24	52	54	49	57
0 904 02-30 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)	16	12	16	18	48	54	47	48
0 905 02-31 DO YOU USE OR REFER TO PULSE WIDTH (PW)	20	19	19	24	56	62	55	57
0 906 02-32 DO YOU USE OR REFER TO PULSE SHAPE	20	19	19	21	53	62	49	57
0 907 02-33 DO YOU USE OR REFER TO PEAK POWER	18	19	17	18	47	62	43	48
0 908 02-34 DO YOU USE OR REFER TO AVERAGE POWER	17	19	16	18	37	46	33	39
0 909 02-35 DO YOU CALCULATE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)	7	8	10	3	34	38	29	43
0 910 02-36 DO YOU MEASURE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)	16	8	14	24	48	46	47	52
0 911 02-37 DO YOU USE FORMULAS TO CALCULATE AVERAGE POWER OR PEAK POWER OF PULSE MODULATION TRANSMIT SYSTEMS	3	4	5	0	11	8	16	4
0 912 02-38 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION TRANSMITTER SCHEMATIC DIAGRAMS	13	15	10	18	43	54	39	43
0 913 02-39 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION RECEIVER SCHEMATIC DIAGRAMS	15	15	13	18	47	62	43	48
0 914 03-01 DO YOU WORK WITH ANTENNAS IN YOUR PRESENT JOB	46	42	47	45	41	38	39	48
0 915 03-02 DO YOU INSPECT ANTENNAS	45	42	45	47	37	23	35	48
0 916 03-03 DO YOU CLEAN ANTENNAS	41	42	42	39	28	8	33	26
0 917 03-04 DO YOU PHYSICALLY ALIGN ANTENNAS	24	23	28	16	1	0	2	0
0 918 03-05 DO YOU ELECTRICALLY ALIGN ANTENNAS	41	38	41	42	3	0	4	4
0 919 03-06 DO YOU TROUBLESHOOT TO ANTENNAS	38	38	37	39	24	0	25	35
0 920 03-07 DO YOU TROUBLESHOOT TO ANTENNA COMPONENTS	36	35	37	34	5	0	6	4
0 921 03-08 DO YOU REMOVE OR INSTALL ANTENNAS	29	27	28	32	25	0	33	22
0 922 03-09 DO YOU REMOVE OR REPLACE COMPONENTS OF ANTENNAS	36	31	37	37	10	15	8	13
0 923 03-10 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF E OR ELECTRIC FIELD LINES	1	0	2	0	2	0	2	4
0 924 03-11 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF H OR MAGNETIC FIELD LINES	1	0	2	0	1	0	2	0
0 925 03-12 DO YOU DETERMINE THE DIRECTION OF THE MAGNETIC LINES IN RELATION TO THE ELECTRIC LINES OF FORCE FOR ANTENNAS	1	0	1	0	1	0	2	0
0 926 03-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE OF CORRECT LENGTH (HALF-WAVE) ACT AS	1	0	1	3	2	0	4	0
0 927 03-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE LONGER THAN A HALF-WAVE ACT AS INDUCTIVE LOADS	1	0	1	3	2	0	4	0
0 928 03-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT ANTENNAS WHICH ARE SHORTER THAN A HALF-WAVE ACT AS CAPACITIVE LOADS	1	0	1	3	2	0	4	0

ANTENNAS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

BY-TSK
SPC SPC SPC SPC SPC SPC SPC SPC SPC SPC

030 031 032 033 034 035 036 037

TASK	SPC 030	SPC 031	SPC 032	SPC 033	SPC 034	SPC 035	SPC 036	SPC 037
0 929 03-16 DO YOU WORK WITH HERTZ ANTENNAS	5	8	5	3	5	0	6	4
0 930 03-17 DO YOU WORK WITH MARCONI ANTENNAS	1	0	1	3	3	0	2	9
0 931 03-18 DO YOU WORK WITH BROADSIDE ARRAYS	4	4	5	3	3	0	4	4
0 932 03-19 DO YOU WORK WITH END-FIRE ARRAYS	3	4	4	3	6	8	8	0
0 933 03-20 DO YOU WORK WITH CARDIAC ARRAYS	2	4	1	3	7	0	4	17
0 934 03-21 DO YOU WORK WITH COLLINEAR ARRAYS	5	8	6	3	3	0	2	9
0 935 03-22 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC INDUCTION FIELDS WHEN WORKING WITH ANTENNAS	1	0	1	0	1	0	2	0
0 936 03-23 DO YOU MEASURE ELECTROMAGNETIC INDUCTION FIELDS OF ANTENNAS	1	0	1	0	2	0	2	4
0 937 03-24 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC RADIATION FIELDS WHEN WORKING WITH ANTENNAS	3	4	4	0	2	0	4	0
0 938 03-25 DO YOU MEASURE ELECTROMAGNETIC RADIATION FIELDS OF ANTENNAS	1	0	1	0	1	0	2	0
0 939 03-26 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA RADIATION	1	0	2	0	1	0	2	0
0 940 03-27 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA INDUCTION FIELD	1	0	1	0	1	0	2	0
0 941 03-28 ARE ANY OF THE ANTENNAS YOU WORK ON LINEARLY POLARIZED	14	12	16	13	7	0	8	9
0 942 03-29 ARE ANY OF THE ANTENNAS YOU WORK ON CIRCULARLY POLARIZED	18	12	17	24	8	8	4	17
0 943 03-30 DO YOU MEASURE OR DETERMINE THE POLARITY OF ANTENNAS YOU WORK ON	9	0	11	11	2	0	4	0
0 944 03-31 DO YOU CONSTRUCT, OR MAKE THE CALCULATIONS NECESSARY TO CONSTRUCT, ANTENNAS OF CORRECT LENGTH FOR ELEMENTS	1	0	2	0	1	0	2	0
0 945 03-32 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS	5	4	6	5	1	0	2	0
0 946 03-33 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS DIRECTORS	5	0	6	5	1	0	2	0
0 947 03-34 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS REFLECTORS	5	4	6	5	2	0	2	4
0 948 03-35 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN DONUT RESEMBER WHAT KIND OF ELEMENTS	23	27	23	21	22	31	20	22
0 949 03-36 DO YOU WORK ON UNIDIRECTIONAL ANTENNAS	14	15	13	13	18	0	20	24
0 950 03-37 DO YOU WORK ON BIDIRECTIONAL ANTENNAS	14	12	14	13	6	8	6	4
0 951 03-38 DO YOU WORK ON DONUT REMEMBER THE DIRECTIONALITY	18	19	19	13	14	23	12	13
0 952 03-39 DO YOU WORK WITH ROTAR ANTENNA ARRAYS	5	4	5	8	0	0	0	0
0 953 PI-01 IN YOUR PRESENT JOB DO YOU WORK WITH TRANSMISSION LINES (TRANSMISSION LINES ARE DEFINED TO INCLUDE LEADS)	9	12	6	11	31	54	31	17
0 954 PI-02 DO YOU REFER TO OR USE COPPER LOSS OR IZR LOSS IN TRANSMISSION LINES	1	0	0	3	2	0	2	4
0 955 PI-03 DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY CURRENTS IN TRANSMISSION LINES	3	4	2	3	6	8	6	4

TRANSMISSION LINES

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	030	031	032	033	034	035	036	037	038	039	040	041	042
P 981 P1-29 DO YOU WORK WITH NONRESONANT (FLAT) TRANSMISSION LINES	2	0	2	3	3	6	4	0					
P 982 P1-30 DO YOU WORK WITH RESONANT TRANSMISSION LINES	3	8	1	3	9	8	12	4					
P 983 P1-31 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING STUR MATCHING	1	4	0	3	2	0	2	4					
P 984 P2-01 DO YOU WORK WITH WAVEGUIDES OR CAVITY RESONATORS IN YOUR PRESENT JOB	56	58	52	63	30	31	27	35					
P 985 P2-02 DO YOU INSPECT WAVEGUIDES OR CAVITY RESONATORS	54	58	48	63	28	15	29	30					
P 986 P2-03 DO YOU CLEAN WAVEGUIDES OR CAVITY RESONATORS	33	27	34	34	22	8	25	22					
P 987 P2-04 DO YOU BEND WAVEGUIDES OR CAVITY RESONATORS	6	8	6	5	5	8	6	0					
P 988 P2-05 DO YOU TRUST WAVEGUIDES OR CAVITY RESONATORS	5	4	6	5	3	8	4	0					
P 989 P2-06 DO YOU PRESSURIZE WAVEGUIDES OR CAVITY RESONATORS	46	46	43	53	2	0	4	0					
P 990 P2-07 DO YOU PURGE WAVEGUIDES OR CAVITY RESONATORS	16	12	12	26	1	0	2	0					
P 991 P2-08 DO YOU TROUBLESHOOT WAVEGUIDES OR CAVITY RESONATORS	31	19	31	37	15	8	16	17					
P 992 P2-09 DO YOU REMOVE OR INSTALL COMPLETE WAVEGUIDES	48	46	46	55	25	15	24	35					
P 993 P2-10 DO YOU REMOVE OR INSTALL WAVEGUIDE SECTIONS	44	35	43	53	17	15	14	22					
P 994 P2-11 DO YOU REMOVE OR INSTALL DUMMY LOADS	31	27	30	37	25	15	24	35					
P 995 P2-12 DO YOU REMOVE OR INSTALL E BENDS	8	0	10	11	3	0	6	0					
P 996 P2-13 DO YOU REMOVE OR INSTALL H BENDS	11	4	11	16	3	0	4	0					
P 997 P2-14 DO YOU REMOVE OR INSTALL OTHER BENDS	17	12	19	16	5	0	4	9					
P 998 P2-15 DO YOU REMOVE OR INSTALL CHOKES	8	0	8	13	2	0	2	4					
P 999 P2-16 DO YOU REMOVE OR INSTALL ROTATING JOINTS	16	8	12	7	8	1	0	2					
P1000 P2-17 DO YOU REMOVE OR INSTALL DIRECTIONAL COUPLERS	12	4	12	18	13	8	12	17					
P1001 P2-18 DO YOU REMOVE OR INSTALL BIDIRECTIONAL COUPLERS	4	0	5	5	1	0	2	0					
P1002 P2-19 DO YOU USE OR REFER TO "A" WALL OF WAVEGUIDES	4	0	5	5	1	0	2	0					
P1003 P2-20 DO YOU USE OR REFER TO "B" WALL OF WAVEGUIDES	3	0	4	5	4	0	8	4					
P1004 P2-21 DO YOU USE OR REFER TO CUTOFF FREQUENCY OF WAVEGUIDES	3	0	4	5	2	8	2	0					
P1005 P2-22 DO YOU USE OR REFER TO FREQUENCY-DETERMINING WALL OF WAVEGUIDES	2	0	0	8	2	8	2	0					
P1006 P2-23 DO YOU USE OR REFER TO POWER-DETERMINING WALL OF WAVEGUIDES	0	0	0	0	1	0	2	0					
P1007 P2-24 DO YOU USE OR REFER TO ELECTRIC FIELD BOUNDARY CONDITIONS	0	0	0	0	1	0	2	0					
P1008 P2-25 DO YOU USE OR REFER TO MAGNETIC FIELD BOUNDARY CONDITIONS	0	0	0	0	1	0	2	0					
P1009 P2-26 DO YOU USE OR REFER TO DUPLEXER FIELD BOUNDARY CONDITIONS	2	0	2	3	1	0	2	0					
P1010 P2-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST WAVEGUIDES ARE MADE WITH A "B" WALL SIZE OF .7 WAVELENGTHS	0	0	0	0	1	0	2	0					
P1011 P2-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST "A" WALLS RANGE FROM .2 TO .5 WAVELENGTHS IN SIZE WITH .35 WHICH WAVEGUIDES ARE MADE OF	0	0	0	0	2	8	2	0					
P1012 P2-29 ARE YOU CONCERNED WITH THE MATERIAL (SUCH AS BRASS) WHICH WAVEGUIDES ARE MADE OF	3	0	4	3	1	0	2	0					
P1013 P2-30 DO YOU COMPUTE THE LENGTH OF A WAVEGUIDE FOR SPECIFIC INSTALLATION	1	0	1	0	2	8	2	0					

WAVEGUIDES AND
CAVITY RESONATORS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DIY-TASK	SPC 030	SPC 031	SPC 032	SPC 033	SPC 034	SPC 035	SPC 036	SPC 037
P1014 P2-31 DO YOU USE THE RIGHT HAND RULE TO DETERMINE THE DIRECTION OF PROPAGATION, DIRECTION OF H^* FIELD, OR	0	0	0	0	1	0	2	0
P1015 P2-32 DO YOU USE OR REFER TO THE TIME PHASE OF PEAK H^* OR H^* LINES IN WAVEGUIDES	1	0	1	0	2	8	2	0
P1016 P2-33 DO YOU MEASURE THE TIME PHASE OF H^* OR H^* LINES IN WAVEGUIDES	1	0	1	0	1	0	2	0
P1017 P2-34 DO YOU USE OR REFER TO THE SPACE QUADRATURE OF H^* OR H^* LINES IN WAVEGUIDES	0	0	0	0	2	8	2	0
P1018 P2-35 ARE HIGH POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	6	0	7	16	3	0	4	0
P1019 P2-36 ARE LOW POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	7	0	10	8	7	0	10	4
P1020 P2-37 ARE LOOPS USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	5	0	5	8	2	0	2	4
P1021 P2-38 ARE APERTURES (WINDOWS OR TRISES) USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	14	0	16	21	3	8	4	0
P1022 P2-39 ARE DONUTS REMEMBER THE KIND OF ENERGY COUPLING USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	22	31	20	18	13	15	8	22
P1023 P2-40 DO YOU DETERMINE WHERE PROBES SHOULD BE MOUNTED IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO	0	0	0	0	2	8	2	0
P1024 P2-41 DO YOU DETERMINE THE POSITIONING OF LOOPS IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO	0	0	0	0	1	0	2	0
P1025 P2-42 DO YOU DETERMINE THE POSITIONING OR SIZE OF APERTURES IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO	0	0	0	0	1	0	2	0
P1026 P2-43 ARE CHECK JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	4	0	5	5	5	8	4	4
P1027 P2-44 ARE ROTATING JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	16	8	17	21	3	0	4	4
P1028 P2-45 ARE DONUTS REMEMBER THE KIND OF JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	24	27	27	18	11	8	10	17
P1029 P2-46 DO YOU TUNE CAVITY RESONATORS USING CAPACITIVE TUNING	5	4	8	5	2	8	2	0
P1030 P2-47 DO YOU TUNE CAVITY RESONATORS USING INDUCTIVE TUNING	5	4	4	8	2	8	2	0
P1031 P2-48 DO YOU TUNE CAVITY RESONATORS USING VOLUME TUNING	10	8	13	5	5	8	4	0
P1032 P2-49 DO YOU TUNE CAVITY RESONATORS USING DONUT REMEMBER THE METHOD OF TUNING	20	19	19	21	9	15	8	4
P1033 P2-50 DO YOU MEASURE THE FREQUENCY OF SIGNALS IN CAVITY RESONATORS	27	15	25	37	8	8	10	4
P1034 P2-51 IN YOUR PRESENT JOB DO YOU WORK WITH KLYSTRONS, TRAVELING WAVE TUBES (TWT), PARAMETRIC AMPLIFIERS, OR	41	46	39	42	85	92	86	78
P1035 P3-02 DO YOU USE OR REFER TO INTERELECTRODE CAPACITANCE	4	0	5	5	23	23	22	26
P1036 P3-03 DO YOU USE OR REFER TO ELECTRON TRANSIT TIME	3	4	2	5	14	8	12	22
P1037 P3-04 DO YOU USE OR REFER TO LEAD INDUCTANCE	2	0	2	3	10	0	12	13

MICROWAVE
AMPLIFIERS AND
OSCILLATORS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC SPC SPC SPC SPC SPC SPC SPC
030 031 032 033 034 035 036 037

7 0 8 11 38 38 37 39

3 0 4 3 17 8 20 17

BY-TASK

TASK	SPC 030	SPC 031	SPC 032	SPC 033	SPC 034	SPC 035	SPC 036	SPC 037
P1038 P3-05 DO YOU USE OR REFER TO RF LOSSES IN EXTERNAL CIRCUITRY	7	0	8	11	38	38	37	39
P1039 P3-06 DO YOU USE OR REFER TO PRINCIPLE OF ELECTRON VELOCITY MODULATION	3	0	4	3	17	8	20	17
P1040 P3-07 DO YOU USE OR REFER TO ELECTRON BUNCHING	3	0	4	3	21	23	18	26
P1041 P3-08 DO YOU WORK WITH TWO-CAVITY KLYSTRONS	5	8	6	3	2	8	0	4
P1042 P3-09 DO YOU WORK WITH THREE-CAVITY KLYSTRONS	2	8	1	0	2	8	0	4
P1043 P3-10 DO YOU WORK WITH REFLECTOR KLYSTRONS	30	38	29	26	2	8	2	0
P1044 P3-11 DO YOU WORK WITH TRAVELING-WAVE TUBES (TWT)	12	4	17	8	63	85	84	78
P1045 P3-12 DO YOU WORK WITH NONDEGENERATIVE PARAMETRIC AMPLIFIERS	2	0	1	5	3	8	2	4
P1046 P3-13 DO YOU WORK WITH UP-CONVERTER PARAMETRIC AMPLIFIERS	2	0	1	5	3	15	2	0
P1047 P3-14 DO YOU WORK WITH MAGNETRONS	35	42	34	34	10	23	6	13
P1048 P3-15 DO YOU INSPECT KLYSTRONS OR TWT	32	38	30	32	66	69	63	70
P1049 P3-16 DO YOU CLEAN KLYSTRONS OR TWT	15	15	17	11	38	38	37	39
P1050 P3-17 DO YOU TUNE KLYSTRONS OR TWT ELECTRICALLY	25	31	25	21	54	46	55	65
P1051 P3-18 DO YOU TUNE KLYSTRONS OR TWT MECHANICALLY	32	31	34	29	17	38	18	4
P1052 P3-19 DO YOU PERFORM OPERATIONAL CHECKS OF KLYSTRONS OR TWT	33	38	31	32	76	77	75	78
P1053 P3-20 DO YOU TROUBLESHOOT KLYSTRONS OR TWT	26	31	27	21	56	62	55	57
P1054 P3-21 DO YOU REMOVE OR REPLACE COMPLETE KLYSTRON OR TWT	33	38	33	32	76	69	75	83
P1055 P3-22 DO YOU REMOVE OR REPLACE KLYSTRON OR TWT COMPONENTS	5	8	4	5	13	31	10	9
P1056 P3-23 DO YOU INSPECT PARAMETRIC AMPLIFIERS	3	4	1	5	3	8	2	4
P1057 P3-24 DO YOU CLEAN PARAMETRIC AMPLIFIERS	2	4	1	3	3	15	2	0
P1058 P3-25 DO YOU ADJUST PARAMETRIC AMPLIFIERS	3	4	4	3	5	23	2	0
P1059 P3-26 DO YOU TUNE PARAMETRIC AMPLIFIERS	3	4	2	3	5	23	2	0
P1060 P3-27 DO YOU PERFORM OPERATIONAL CHECKS OF PARAMETRIC AMPLIFIERS	5	4	4	8	5	23	2	0
P1061 P3-28 DO YOU TROUBLESHOOT PARAMETRIC AMPLIFIERS	2	4	1	3	5	23	2	0
P1062 P3-29 DO YOU REMOVE OR REPLACE COMPLETE PARAMETRIC AMPLIFIER	5	4	5	8	6	23	2	4
P1063 P3-30 DO YOU REMOVE OR REPLACE PARAMETRIC AMPLIFIER COMPONENTS	1	4	1	0	3	15	2	0
P1064 P3-31 DO YOU INSPECT MAGNETRONS	35	38	35	32	5	15	2	4
P1065 P3-32 DO YOU CLEAN MAGNETRONS	22	23	24	18	3	15	0	4
P1066 P3-33 DO YOU ADJUST MAGNETRONS	29	38	28	24	2	15	0	0
P1067 P3-34 DO YOU TUNE MAGNETRONS	31	38	31	24	2	15	0	0
P1068 P3-35 DO YOU PERFORM OPERATIONAL CHECKS OF MAGNETRONS	35	38	35	32	3	15	2	0
P1069 P3-36 DO YOU TROUBLESHOOT MAGNETRONS	29	27	29	29	3	8	2	9
P1070 P3-37 DO YOU REMOVE OR REPLACE COMPLETE MAGNETRON	35	38	35	34	5	8	2	9
P1071 P3-38 DO YOU REMOVE OR REPLACE MAGNETRON COMPONENTS	10	12	10	8	1	8	0	0
P1072 P3-39 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS COLLECTOR PLATES	1	0	1	0	0	0	0	0
P1073 P3-40 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER CAVITIES	0	0	0	0	1	8	0	0
P1074 P3-41 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER GRID5	0	0	0	0	1	8	0	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

BY-TSK

	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	030	031	032	033	034	035	036	037	038	039	040	041
P1075 P3-42 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRO-CAVITY KLYSTRONS FEEDBACK LOOPS	1	0	1	3	1	8	0	0				
P1076 P3-43 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRO-CAVITY KLYSTRONS DRIFT SPACES	1	0	1	0	1	8	0	0				
P1077 P3-44 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRO-CAVITY KLYSTRONS BUNCHER GRIDS	1	0	0	3	1	8	0	0				
P1078 P3-45 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRO-CAVITY KLYSTRONS BUNCHER CAVITIES	1	0	0	3	1	8	0	0				
P1079 P3-46 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRO-CAVITY KLYSTRONS CONTROL GRIDS	1	0	0	3	2	15	0	0				
P1080 P3-47 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRO-CAVITY KLYSTRONS CATHODES	1	0	1	3	2	15	0	0				
P1081 P3-48 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON REPELLER (REFLECTOR) PLATES	7	4	7	11	2	15	0	0				
P1082 P3-49 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRIDS	6	4	6	8	3	23	0	0				
P1083 P3-50 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRID CAVITY GAPS	4	0	4	8	2	15	0	0				
P1084 P3-51 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON RESONANT CAVITIES	9	0	11	11	2	15	0	0				
P1085 P3-52 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON MAGNETIC COUPLING LOOPS	3	4	2	5	2	15	0	0				
P1086 P3-53 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON FILAMENTS	9	0	11	11	2	15	0	0				
P1087 P3-54 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON CATHODES	7	0	8	11	2	15	0	0				
P1088 P3-55 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON OUTPUT LEADS	10	4	8	16	2	15	0	0				
P1089 P3-56 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES FILAMENTS	2	0	4	0	57	46	59	61				
P1090 P3-57 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES CATHODES	1	0	2	0	66	62	69	61				
P1091 P3-58 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MODULATOR GRIDS	1	0	1	3	56	46	57	61				
P1092 P3-59 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ANODES	2	0	2	3	57	54	59	57				
P1093 P3-60 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES HELICES	1	0	1	3	52	38	53	57				
P1094 P3-61 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES COLLECTORS	3	4	4	4	3	61	62	65	52			
P1095 P3-62 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MAGNETS	3	4	2	5	29	38	29	22				
P1096 P3-63 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ATTENUATORS	3	0	4	5	49	85	45	39				
P1097 P3-64 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE CIRCULATORS	0	0	0	0	0	1	0	2	0			
P1098 P3-65 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER SIGNAL CAVITIES	0	0	0	0	0	1	0	2	0			

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DI-TSK

	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	030	031	032	033	034	035	036	037	
P1099 P3-66 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER IDLER CAVITIES	0	0	0	0	1	0	2	0	
P1100 P3-67 DC YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER VARACTOR DIODES	0	0	0	0	1	0	2	0	
P1101 P3-68 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE ISOLATORS	0	0	0	0	1	0	2	0	
P1102 P3-69 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER REVERSE-BIAS BATTERIES	0	0	0	0	1	0	2	0	
P1103 P3-70 DO YOU PERFORM TASKS ON ANODES	3	0	5	0	5	23	0	4	
P1104 P3-71 DO YOU PERFORM TASKS ON ANODE COOLING PINS	1	0	2	0	3	15	0	4	
P1105 P3-72 DO YOU PERFORM TASKS ON COUPLING LOOPS	3	0	4	3	3	15	0	4	
P1106 P3-73 DO YOU PERFORM TASKS ON HEATER LEADS	3	0	5	0	5	23	0	4	
P1107 P3-74 DO YOU PERFORM TASKS ON RESONANT CAVITIES	6	4	6	8	3	15	0	4	
P1108 P3-75 DC YOU PERFORM TASKS ON CATHODES	5	0	6	5	5	23	0	4	
P1109 P3-76 DO YOU PERFORM TASKS ON MAGNETS	4	0	4	3	3	15	0	4	
G1110 G1-01 DO YOU USE OR REFER TO STORAGE REGISTERS	24	15	23	32	24	31	22	26	
G1111 G1-02 DO YOU USE OR REFER TO SHIFT REGISTERS	24	15	23	34	33	31	31	39	
G1112 G1-03 DO YOU USE OR REFER TO LOGIC SYMBOLS OF SHIFT REGISTERS	24	15	24	32	31	31	29	35	REGISTERS
G1113 G1-04 DO YOU USE OR REFER TO LOGIC SYMBOLS OF STORAGE REGISTERS	24	15	24	29	22	23	22	22	
G1114 G1-05 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	18	15	16	26	31	8	33	39	
G1115 G1-06 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF REGISTERS	16	12	13	24	22	8	22	30	
G1116 G1-07 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES	7	4	5	13	22	15	22	26	
G1117 G2-01 DO YOU WORK WITH DIGITAL COUNTERS, REGISTERS, OR STORAGE DEVICES IN YOUR PRESENT JOB	32	31	31	34	34	38	31	39	
G1118 G2-02 DC YOU USE OR REFER TO DELAY LINES	18	27	17	16	29	38	25	30	STORAGE DEVICES
G1119 G2-03 DO YOU USE OR REFER TO MAGNETIC CORES	22	19	23	24	7	23	4	4	
G1120 G2-04 DO YOU USE OR REFER TO MAGNETIC DRUMS	5	4	6	5	6	23	4	0	
G1121 G2-05 DC YOU USE OR REFER TO MAGNETIC TAPES	22	19	20	26	16	23	4	30	
G1122 G2-06 DO YOU USE OR REFER TO ACCESS TIME OR SPEED OR MEMORY SYSTEMS	16	12	14	21	20	23	14	30	
G1123 G2-07 DO YOU USE OR REFER TO WORD CAPACITY OF MEMORY SYSTEMS	19	19	18	21	9	8	6	17	
G1124 G2-08 DO YOU USE OR REFER TO VOLATILITY OF MEMORY SYSTEMS	10	8	8	16	4	6	4	4	
G1125 G2-09 DO YOU USE OR REFER TO LOGIC SYMBOL OF DELAY LINES	10	8	8	16	17	23	16	17	
G1126 G3-01 IN YOUR PRESENT JOB, DO YOU WORK WITH DIGITAL-TO-ANALOG (D/A) CONVERTERS, ANALOG-TO-DIGITAL (A/D) ANALOG	39	35	37	47	23	46	17	35	
G1127 G3-02 DO YOU COMPUTE OUTPUT VOLTAGES FOR ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT	2	0	2	3	1	8	0	0	DIGITAL TO ANALOG CONVERTERS
G1128 G3-03 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE COUNT IN ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A)	2	0	2	3	1	8	0	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

BY-TASK	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	030	031	032	033	034	035	036	037		
81129 43-04 DO YOU COMPUTE ANALOG VOLTAGES FOR GIVEN BINARY COUNTS IN ELECTRONIC DIGITAL-TO-ANALOG (D/A) CONVERTERS	2	0	2	3	3	15	2	0		
81130 03-05 DO YOU PERFORM SAMPLE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	5	8	5	5	2	0	4	0		
81131 03-06 DO YOU PERFORM HOLD FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	6	8	5	8	1	0	2	0		
81132 03-07 DO YOU PERFORM COMPARE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	6	12	4	8	2	0	4	0		
81133 03-08 DO YOU PERFORM DIGITIZE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	5	8	5	3	2	0	4	0		
81134 13-09 DO YOU PERFORM DONAT REPEMBER WHICH FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	9	4	11	8	6	8	4	9		
81135 03-10 DO YOU USE OR REFER TO SAMPLE FUNCTION OF A/D CONVERTERS	6	4	8	3	5	8	4	4		
81136 03-11 DO YOU USE OR REFER TO HOLD FUNCTION OF A/D CONVERTERS	7	4	8	5	6	8	6	4		
81137 03-12 DO YOU USE OR REFER TO COMPARE FUNCTION OF A/D CONVERTERS	7	8	7	5	3	8	4	0		
81138 03-13 DO YOU USE OR REFER TO DIGITAL FUNCTION OF A/D CONVERTERS	7	6	8	3	6	8	6	4		
81139 43-14 DO YOU PERFORM ANY TASKS ON MECHANICAL ANALOG-TO-DIGITAL (A/D) CONVERTERS	7	8	6	11	5	15	2	4		
81140 01-01 DO YOU WORK WITH PHANTASTRON CIRCUITRY IN YOUR PRESENT JOB	3	0	4	3	5	15	4	0		PHANTASTRONS
81141 02-01 IN YOUR PRESENT JOB DO YOU WORK WITH SCHMITT TRIGGER CIRCUITS	19	15	16	29	33	54	31	26		SCHMITT TRIGGERS
81142 02-02 DO YOU TRACE DATA FLOW THROUGH SCHMITT TRIGGER SCHEMATIC DIAGRAMS	12	4	11	18	25	31	25	22		
81143 02-03 DO YOU USE OR REFER TO SCHMITT TRIGGER LOGIC SYMBOLS	11	4	11	16	23	38	22	17		
81144 03-01 IN YOUR PRESENT JOB DO YOU FABRICATE MULTICONDUCTOR CABLES	37	12	41	47	49	38	47	61		CABLE FABRICATION
81145 03-02 DO YOU FABRICATE COAXIAL CABLES	51	35	53	58	61	62	61	61		
81146 01-01 IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS ON VISUAL READOUT SYSTEMS	52	54	48	58	47	62	41	52		
81147 01-02 DO YOU PERFORM ANY TASKS ON NIXIE LIGHTS OR NIXIE LIGHT DECODER SYSTEMS	35	23	31	50	17	0	16	30		INPUT/OUTPUT DEVICES
81148 01-03 DO YOU ANALYZE NIXIE LIGHT DECODER SYSTEMS USING BOOLEAN ALGEBRA	5	0	7	5	1	0	2	0		
81149 02-01 DO YOU WORK WITH PHOTO TUBES IN YOUR PRESENT JOB	3	4	4	3	5	8	4	4		PHOTO SENSITIVE DEVICES
81150 03-01 IN YOUR PRESENT JOB DO YOU WORK WITH CHOPPER CIRCUITS	7	8	7	8	17	23	18	17		
81151 03-02 DO YOU MEASURE EXCITATION FREQUENCIES	0	0	0	0	5	8	4	4		
81152 03-03 DO YOU MEASURE VOLTAGE-CURRENT PHASE RELATIONSHIPS	0	0	0	0	5	8	4	4		SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS)
81153 03-04 DO YOU USE OR REFER TO EXCITATION FREQUENCIES	0	0	0	0	5	8	4	0		
81154 03-05 DO YOU USE OR REFER TO VOLTAGE-CURRENT PHASE RELATIONSHIPS	0	0	0	0	5	8	4	0		
81155 03-06 DO YOU USE SERVOES IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	3	4	2	5	7	23	4	4		

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC SPC SPC SPC SPC SPC SPC SPC
030 031 032 033 034 035 036 037

Task Description	030	031	032	033	034	035	036	037
11192 T2-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF LASER SYSTEMS	0	0	0	0	1	8	0	0
11193 T2-08 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF LASER SYSTEMS	0	0	0	0	1	8	0	0
11194 T2-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF LASER SYSTEMS	0	0	0	0	1	8	0	0
11195 T2-10 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF LASER SYSTEMS	0	0	0	0	1	8	0	0
11196 T2-11 DO YOU USE OR REFER TO ANGSTROMS (A)	0	0	0	0	0	0	0	0
11197 T2-12 DO YOU USE OR REFER TO ELECTRON ENERGY LEVELS	1	0	0	3	1	0	0	4
11198 T2-13 DO YOU USE OR REFER TO GROUND STATE	1	0	0	3	1	0	0	4
11199 T2-14 DO YOU USE OR REFER TO EXCITED STATE	1	0	0	3	1	0	0	4
11200 T2-15 DO YOU USE OR REFER TO PACKET OF RADIATION	0	0	0	0	0	0	0	0
11201 T2-16 DO YOU USE OR REFER TO PHOTONS	0	0	0	0	0	0	0	0
11202 T2-17 DO YOU USE OR REFER TO SPONTANEOUS EMISSION	1	0	0	0	0	0	0	0
11203 T2-18 DO YOU USE OR REFER TO STIMULATED EMISSION	1	0	0	3	0	0	0	0
11204 T2-19 DO YOU USE OR REFER TO COHERENCE OR INCOHERENCE	1	0	0	3	0	0	0	0
11205 T2-20 DO YOU USE OR REFER TO INVERSION LEVEL	1	0	0	3	1	8	0	0
11206 T2-21 DO YOU USE OR REFER TO MONOCHROMATIC	1	0	0	3	1	8	0	0
11207 T2-22 DO YOU WORK WITH ACTIVE MATERIALS	1	0	0	3	1	8	0	0
11208 T2-23 DO YOU WORK WITH PUMPING SOURCES	1	0	0	3	0	0	0	0
11209 T2-24 DO YOU WORK WITH FULL SILVERED (100% REFLECTIVE) MIRRORS	1	0	0	3	0	0	0	0
11210 T2-25 DO YOU WORK WITH HALF SILVERED (50% REFLECTIVE) MIRRORS	0	0	0	0	0	0	0	0
11211 T2-26 DO YOU WORK WITH HELICAL FLASHTUBES	0	0	0	0	0	0	0	0
11212 T2-27 DO YOU WORK WITH RUBY	0	0	0	0	0	0	0	0
11213 T2-28 DO YOU WORK WITH HELIUM-NEON	1	0	0	3	0	0	0	0
11214 T2-29 DO YOU WORK WITH HELIUM-ARGON	0	0	0	0	0	0	0	0
11215 T2-30 DO YOU WORK WITH KRYPTON	0	0	0	0	0	0	0	0
11216 T2-31 DO YOU WORK WITH CESIUM-HELIUM	0	0	0	0	0	0	0	0
11217 T2-32 DO YOU WORK WITH ARGON	0	0	0	0	0	0	0	0
11218 T2-33 DO YOU WORK WITH NEODYMIUM IN GLASS	1	0	0	3	0	0	0	0
11219 T2-34 DO YOU WORK WITH GALLIUM ARSENIDE	1	0	0	3	0	0	0	0
11220 T2-35 DO YOU WORK WITH DISPLAY TUBES, SUCH AS DIRECT VIEW STORAGE (DVS) OR MULTIPLE MODE	30	27	24	45	33	62	24	19
11221 T2-36 DO YOU INSPECT DYST OR MHST	27	23	22	42	28	54	20	30
11222 T2-37 DO YOU CLEAN DYST OR MHST	23	19	18	37	22	46	14	26
11223 T2-38 DO YOU ADJUST OR CALIBRATE DYST OR MHST	18	15	14	29	24	46	16	30
11224 T2-39 DO YOU OPERATE SYSTEMS THAT CONTAIN DYST OR MHST	25	19	19	42	31	62	22	35
11225 T2-40 DO YOU TROUBLESHOOT DYST OR MHST CIRCUITS	18	15	16	24	25	54	16	30
11226 T2-41 DO YOU REMOVE OR REPLACE DYST OR MHST TUBES FROM MAJOR ASSEMBLIES OR UNITS	26	23	22	37	29	54	18	39
11227 T2-42 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF DYST	9	0	6	16	11	15	10	13

DISPLAY TUBES

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

Task ID	Description	030	031	032	033	034	035	036	037
11228	T3-09 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF THE FLOOD GUNS	3	0	1	8	8	8	6	13
11229	T3-10 DO YOU PERFORM TASKS ON WRITE GUNS	6	4	6	8	14	38	10	9
11230	T3-11 DO YOU PERFORM TASKS ON ATTACK GUNS	7	4	6	11	28	54	20	30
11231	T3-12 DO YOU PERFORM TASKS ON ERASE GUNS	2	0	2	3	6	31	2	0
11232	T3-13 DO YOU PERFORM TASKS ON STORAGE GRIDS	4	0	5	5	26	54	20	26
11233	T3-14 DO YOU PERFORM TASKS ON STORAGE GRIDS	2	0	2	3	21	54	18	17
11234	UI-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY PROGRAMMING TASKS	30	27	34	24	33	46	29	35
11235	UI-02 DO YOU USE OR REFER TO DECIMAL SYSTEMS	16	19	17	11	18	31	18	13
11236	UI-03 DO YOU USE OR REFER TO PROGRAMS	30	27	34	24	22	38	18	22
11237	UI-04 DO YOU USE OR REFER TO HEXIDECIMAL SYSTEMS	26	27	29	18	9	15	8	9
11238	UI-05 DO YOU USE OR REFER TO 8-4-2-1 SYSTEMS	6	8	7	3	9	15	8	9
11239	UI-06 DO YOU USE OR REFER TO FOUR SYSTEMS	1	4	1	0	6	8	4	9
11240	UI-07 DO YOU USE OR REFER TO BINARY SYSTEMS	22	23	25	13	15	23	10	22
11241	UI-08 DO YOU USE OR REFER TO TIME-SHARING	14	19	12	16	16	31	12	17
11242	UI-09 DO YOU USE OR REFER TO DATA WORDS	29	31	30	24	21	23	18	26
11243	UI-10 DO YOU USE OR REFER TO ADDRESS WORDS	31	31	34	26	21	31	14	30
11244	UI-11 DO YOU USE OR REFER TO ADDRESS/SURADDRESS	24	27	22	26	20	31	14	22
11245	UI-12 DO YOU USE OR REFER TO STEERING/INFORMATION	16	19	13	18	14	15	12	17
11246	UI-13 DO YOU USE OR REFER TO INFORMATION WORDS	28	27	29	26	18	31	12	26
11247	UI-14 DO YOU PERFORM TASKS ON SINGLE LEVEL PROGRAMMING	10	12	10	8	14	31	8	17
11248	UI-15 DO YOU PERFORM TASKS ON MULTI-LEVEL PROGRAMMING	8	8	8	8	9	23	8	4
11249	UI-16 DO YOU PERFORM TASKS ON INPUT DEVICES	13	15	12	13	5	8	4	4
11250	UI-17 DO YOU PERFORM TASKS ON STORAGE DEVICES	12	12	12	11	2	0	2	4
11251	UI-18 DO YOU PERFORM TASKS ON ARITHMETIC SECTIONS	10	12	11	8	2	0	2	4
11252	UI-19 DO YOU PERFORM TASKS ON CONTROL SECTIONS	14	19	13	13	5	8	4	4
11253	UI-20 DO YOU PERFORM TASKS ON OUTPUT DEVICES	14	19	13	13	6	15	4	4
11254	UI-21 DO YOU PERFORM TASKS ON POWER SUPPLIES	14	19	13	13	5	8	4	4
11255	UI-01 DO YOU USE DECIBELS TO EXPRESS AMPLIFICATION AND ATTENUATION	48	38	48	53	80	69	84	78
11256	UI-02 DO YOU USE LOGARITHMS TO COMPUTE OUTPUT POWER IN DECIBELS	4	4	5	3	11	0	14	13
11257	UI-03 DO YOU USE LOGARITHMS TO COMPUTE ATTENUATION IN DECIBELS	4	4	5	3	11	0	12	17

DB AND POWER RATIOS

UNITED STATES AIR FORCE
JOB INVENTORY

JOB INVENTORY FOR INTEGRATED AVIONICS (328X0/11/X2)

- A 1 MATHEMATICS, DIRECT CURRENT, VOLTAGE, AND RESISTANCE
- A 2 1-101 DO YOU USE AN INSTRUMENT, SUCH AS METER OR AN OSCILLOSCOPE, IN WHICH IT IS NECESSARY TO AMPLIFY OR ATTENUATE A VOLTAGE, RESISTANCE, ETC., BY POWERS OF 10.
- A 3 1-102 DO YOU USE A PUBLICATION, SUCH AS A TECHNICAL ORDER OR MAINTENANCE MANUAL, IN WHICH IT IS NECESSARY FOR YOU TO MULTIPLY OR DIVIDE BY A POWER OF 10 BEFORE YOU CAN APPLY THE INFORMATION FROM THE PUBLICATION IN A USEFUL WAY ON THE JOB.
- A 4 1-103 DO YOU REARRANGE AND SOLVE FORMULAS OR EQUATIONS.
- A 5 1-104 DO YOU FIND THE SQUARE ROOT OF A QUANTITY.
- A 6 1-105 DO YOU SOLVE FOR AN UNKNOWN QUANTITY.
- A 7 1-106 DO YOU CONVERT NUMBERS TO LOGARITHMS.
- A 8 1-107 DO YOU USE LOGARITHM TABLES IN ANY TYPE OF CALCULATIONS.
- A 9 1-108 DO YOU SOLVE QUADRATIC EQUATIONS.
- A 10 1-109 DO YOU USE THE NATURAL SYSTEM OF LOGARITHMS (THIS IS THE LOGARITHM SYSTEM WHICH USES THE NUMBER 2.718 AS A BASE).
- A 11 1-110 DO YOU WORK WITH VECTOR QUANTITIES, SUCH AS ADDING OR SUBTRACTING TWO VECTORS.
- A 12 1-111 DO YOU WORK WITH TRIGONOMETRIC FUNCTIONS SUCH AS SINE, COSINE, OR TANGENT.
- A 13 1-112 DO YOU DETERMINE AREAS OF PLANE FIGURES, SUCH AS AREAS OF CIRCLES OR TRIANGLES.
- A 14 1-113 DO YOU SOLVE OR USE SIMULTANEOUS EQUATIONS.
- A 15 1-114 DO YOU SOLVE OR USE PROPORTIONS.
- A 16 1-115 DO YOU USE THE TERM VOLTAGE OR VOLT.
- A 17 1-116 DO YOU USE THE TERM ELECTROMOTIVE FORCE (EMF).
- A 18 1-117 DO YOU USE THE TERM OHM.
- A 19 1-118 DO YOU USE THE TERM DYNE.
- A 20 1-119 DO YOU USE THE TERM AMPERE.
- A 21 1-120 DO YOU USE THE TERM NEUTRON.
- A 22 1-121 DO YOU USE THE TERM COULOMB.
- A 23 1-122 DO YOU USE THE TERM PROTON.
- A 24 1-123 DO YOU WORK WITH RESISTORS IN YOUR PRESENT JOB.
- A 25 1-124 DO YOU INSPECT RESISTORS.
- A 26 1-125 DO YOU CLEAN RESISTORS.
- A 27 1-126 DO YOU ADJUST RESISTORS.
- A 28 1-127 DO YOU CHECK OHMIC VALUE OF RESISTORS.
- A 29 1-128 DO YOU REMOVE OR REPLACE RESISTORS.
- A 30 1-129 DO YOU USE OR REFER TO TEMPERATURE COEFFICIENTS FOR RESISTORS ON ANY TASKS IN YOUR PRESENT JOB.
- A 31 1-130 DO YOU USE OR REFER TO RESISTOR SYMBOLS, SUCH AS FOR FIXED RESISTORS OR FOR TAPPED RESISTORS.
- A 32 1-131 DO YOU IDENTIFY OR CLASSIFY THE RESISTORS YOU WORK WITH AS CARBON, FIXED WIRE, SLIDE TAP, RHEOSTAT OR POTENTIOMETER.
- A 33 1-132 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE THE OHMIC VALUE OF RESISTANCE.
- A 34 1-133 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE THE TOLERANCE OF RESISTORS.
- A 35 1-134 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE THE FAILURE RATE OF RESISTORS.
- A 36 1-135 DO YOU MAKE DECISIONS IN WHICH YOU MUST DETERMINE HOW TWO OR MORE BATTERIES MUST BE CONNECTED TOGETHER TO ACHIEVE A SPECIFIC VOLTAGE.
- A 37 1-136 DO YOU USE OR REFER TO THE SCHEMATIC SYMBOLS WHICH REPRESENT ANY OF THE FOLLOWING COMPONENTS: BATTERY, FUSE, CONDUCTOR, LAMP OR SWITCH.
- A 38 1-137 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES RESISTIVE CIRCUITS.
- A 39 1-138 DO YOU CALCULATE TOTAL CURRENT FOR SERIES RESISTIVE CIRCUITS.
- A 40 1-139 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES RESISTIVE CIRCUITS.
- A 41 1-140 DO YOU CALCULATE POWER DISSIPATION FOR SERIES RESISTIVE CIRCUITS.
- A 42 1-141 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES PARALLEL RESISTIVE CIRCUITS.
- A 43 1-142 DO YOU CALCULATE TOTAL CURRENT FOR SERIES PARALLEL RESISTIVE CIRCUITS.
- A 44 1-143 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES PARALLEL RESISTIVE CIRCUITS.
- A 45 1-144 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR SERIES PARALLEL RESISTIVE CIRCUITS.
- A 46 1-145 DO YOU CALCULATE POWER DISSIPATION FOR SERIES PARALLEL RESISTIVE CIRCUITS.
- A 47 1-146 DO YOU CALCULATE TOTAL RESISTANCE FOR PARALLEL RESISTIVE CIRCUITS.
- A 48 1-147 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RESISTIVE CIRCUITS.
- A 49 1-148 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR PARALLEL RESISTIVE CIRCUITS.
- A 50 1-149 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR PARALLEL RESISTIVE CIRCUITS.
- A 51 1-150 DO YOU CALCULATE POWER DISSIPATION FOR PARALLEL RESISTIVE CIRCUITS.

- B 85 B3-19 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES-PARALLEL CIRCUITS.
- B 86 B3-20 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LAGS VOLTAGE IN AC INDUCTOR CIRCUITS.
- B 87 B3-21 DO YOU CALCULATE INDUCTIVE REACTANCE.
- B 88 B3-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTIVE REACTANCE IS DIRECTLY PROPORTIONAL TO FREQUENCY.
- B 89 B3-23 DO YOU WORK WITH POWER INDUCTORS.
- B 90 B3-24 DO YOU WORK WITH AUDIO FREQUENCY INDUCTORS.
- B 91 B3-25 DO YOU WORK WITH RADIO FREQUENCY INDUCTORS.
- C CAPACITORS, CAPACITIVE REACTANCE, TRANSFORMERS, AND MAGNETISM
- C 92 C1-01 DO YOU WORK WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS ON YOUR PRESENT JOB.
- C 93 C1-02 DO YOU INSPECT CAPACITORS.
- C 94 C1-03 DO YOU CLEAN CAPACITORS.
- C 95 C1-04 DO YOU ADJUST CAPACITORS.
- C 96 C1-05 DO YOU TEST CAPACITORS.
- C 97 C1-06 DO YOU DISCHARGE CAPACITORS.
- C 98 C1-07 DO YOU REMOVE OR REPLACE CAPACITORS.
- C 99 C1-08 DO YOU USE OR REFER TO DISTRIBUTED CAPACITANCE.
- C100 C1-09 DO YOU USE OR REFER TO ORBITAL STRESS OF ELECTRONS IN A DIELECTRIC.
- C101 C1-10 DO YOU USE OR REFER TO FARADS, MICROFARADS, OR PICOFARADS.
- C102 C1-11 DO YOU USE OR REFER TO CAPACITANCE.
- C103 C1-12 DO YOU USE OR REFER TO DIELECTRIC CONSTANT.
- C104 C1-13 DO YOU USE OR REFER TO WORKING VOLTAGE RATING OF CAPACITORS.
- C105 C1-14 DO YOU USE OR REFER TO CAPACITIVE REACTANCE.
- C106 C1-15 DO YOU USE OR REFER TO CAPACITOR COLOR CODES.
- C107 C1-16 THE CAPACITORS YOU WORK WITH IN DC CIRCUITS.
- C108 C1-17 THE CAPACITORS YOU WORK WITH ARE IN AC CIRCUITS.
- C109 C1-18 THE CAPACITORS YOU WORK WITH ARE IN CIRCUITS WITH BOTH DC AND AC.
- C110 C1-19 THE CAPACITORS YOU WORK WITH ARE DON'T REMEMBER WHICH CIRCUITS.
- C111 C1-20 DO YOU CALCULATE CAPACITANCE FOR A PARTICULAR CAPACITOR USING FORMULAS.
- C112 C1-21 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE CAPACITANCE OF A CAPACITOR IS DIRECTLY PROPORTIONAL TO THE DIELECTRIC CONSTANT.
- C113 C1-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE CAPACITANCE OF A CAPACITOR IS INVERSELY PROPORTIONAL TO THE DIELECTRIC THICKNESS.
- C114 C1-23 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES.
- C115 C1-24 DO YOU CALCULATE THE TOTAL CAPACITANCE OF
- B 82 B1-01 DO YOU MEASURE RESISTANCE.
- B 83 B1-02 DO YOU REPAIR AN OHMMETER.
- B 84 B1-03 DO YOU MEASURE VOLTAGE.
- B 85 B1-04 DO YOU REPAIR A VOLTMETER.
- B 86 B1-05 DO YOU REPAIR AN AMMETER.
- B 87 B1-06 DO YOU MEASURE CURRENT.
- B 88 B1-07 DO YOU USE A MULTIMETER.
- B 89 B1-08 DO YOU DIRECTLY USE A QUANTITY OF CHARGE CALLED A COULOMB.
- A COULOMB.
- B 90 B1-09 DO YOU READ SCHEMATICS.
- B 91 B1-01 DO YOU USE OR REFER THE TERM EFFECTIVE VOLTAGE (RMS).
- B 92 B1-02 DO YOU USE OR REFER THE TERM PEAK TO PEAK VOLTAGE.
- B 93 B1-03 DO YOU USE OR REFER THE TERM AVERAGE VOLTAGE (DC).
- B 94 B1-04 DO YOU USE OR REFER THE TERM WAVE LENGTH.
- B 95 B1-05 DO YOU USE OR REFER THE TERM FREQUENCY.
- B 96 B1-06 DO YOU USE OR REFER THE TERM INSTANTANEOUS VALUE.
- B 97 B1-07 DO YOU WORK WITH INDUCTORS OR CIRCUITS CONTAINING INDUCTORS, CORES, OR CHOKES COILS IN YOUR PRESENT JOB.
- B 98 B1-08 DO YOU INSPECT INDUCTORS.
- B 99 B1-09 DO YOU CLEAN INDUCTORS.
- B 100 B1-10 DO YOU ADJUST INDUCTORS.
- B 101 B1-11 DO YOU REMOVE OR REPLACE INDUCTORS.
- B 102 B1-12 DO YOU USE OR REFER TO INDUCTANCE.
- B 103 B1-13 DO YOU USE OR REFER TO HENRIES.
- B 104 B1-14 DO YOU USE OR REFER TO INDUCTIVE REACTANCE.
- B 105 B1-15 DO YOU USE OR REFER TO COPPER LOSS IN INDUCTORS.
- B 106 B1-16 DO YOU USE OR REFER TO HYSTERESIS LOSS IN INDUCTORS.
- B 107 B1-17 DO YOU USE OR REFER TO EDDY CURRENT LOSS IN INDUCTORS.
- B 108 B1-18 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTANCE IS PROPORTIONAL TO THE SQUARE OF THE NUMBER OF TURNS OF THE COIL.
- B 109 B1-19 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE CROSS SECTIONAL AREA OF THE CORE.
- B 110 B1-20 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS INVERSELY PROPORTIONAL TO ITS LENGTH.
- B 111 B1-21 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE PERMEABILITY OF THE CORE MATERIAL.
- B 112 B1-22 DO YOU CALCULATE INDUCTANCE FOR A PARTICULAR INDUCTOR USING FORMULAS.
- B 113 B1-23 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES.
- B 114 B1-24 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR

JOB INVENTORY(DUTY/TASK TITLES)

- C116 C1-25 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES-PARALLEL CIRCUITS.
- C117 C1-26 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT DOES NOT FLOW THROUGH CAPACITORS, IT ONLY APPEARS TO DO SO.
- C118 C1-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEADS VOLTAGE IN AC CAPACITOR CIRCUITS.
- C119 C1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITIVE REACTANCE IS INVERSELY PROPORTIONAL TO FREQUENCY.
- C120 C1-29 DO YOU CALCULATE CAPACITIVE REACTANCE.
- C121 C1-30 DO YOU WORK WITH MOTOR-STATOR CAPACITORS (VARIABLE).
- C122 C1-31 DO YOU WORK WITH COMPRESSION (TEMPER) CAPACITORS.
- C123 C1-32 DO YOU WORK WITH ELECTROLYTIC CAPACITORS (FIXED).
- C124 C1-33 DO YOU WORK WITH PAPER CAPACITORS (FIXED).
- C125 C1-34 DO YOU WORK WITH MICA CAPACITORS (FIXED).
- C126 C1-35 DO YOU WORK WITH CERAMIC CAPACITORS (FIXED).
- C127 C1-36 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF CAPACITORS.
- C128 C2-01 DO YOU WORK WITH TRANSFORMERS ON YOUR PRESENT JOB.
- C129 C2-02 DO YOU INSPECT TRANSFORMERS.
- C130 C2-03 DO YOU CLEAN TRANSFORMERS.
- C131 C2-04 DO YOU ADJUST TRANSFORMERS.
- C132 C2-05 DO YOU TROUBLESHOOT TRANSFORMERS.
- C133 C2-06 DO YOU REMOVE OR REPLACE COMPLETE TRANSFORMERS.
- C134 C2-07 DO YOU REMOVE OR REPLACE TRANSFORMER PARTS, SUCH AS THE PRIMARY WINDING.
- C135 C2-08 DO YOU MAKE A DISTINCTION BETWEEN MUTUAL INDUCTION AND MUTUAL INDUCTANCE (M).
- C136 C2-09 DO YOU USE THE SYMBOL FOR MUTUAL INDUCTANCE, M.
- C137 C2-10 DO YOU REFER TO OR USE THE COEFFICIENT OF COUPLING WHEN WORKING WITH TRANSFORMERS.
- C138 C2-11 DO YOU CALCULATE TURNS RATIOS FOR TRANSFORMERS USING CURRENT OR VOLTAGE RATIOS.
- C139 C2-12 DO YOU REFER TO REFLECTED IMPEDANCE WHEN WORKING WITH TRANSFORMERS.
- C140 C2-13 DO YOU CALCULATE IMPEDANCE INTERACTIONS FOR TRANSFORMERS.
- C141 C2-14 DO YOU WORK WITH AUTOTRANSFORMERS.
- C142 C2-15 DO YOU WORK WITH POWER TRANSFORMERS.
- C143 C2-16 DO YOU WORK WITH AUDIO TRANSFORMERS.
- C144 C2-17 DO YOU WORK WITH RADIO FREQUENCY TRANSFORMERS.
- C145 C2-18 DO YOU WORK WITH DON'T REMEMBER WHAT TYPE OF TRANSFORMER.
- C146 C2-19 DO YOU CHECK TRANSFORMERS FOR OPEN WINDINGS BY MEASURING RESISTANCE.
- C147 C2-20 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING RESISTANCE.
- C148 C2-21 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING OUTPUT VOLTAGES.
- C149 C2-22 DO YOU MEASURE RESISTANCE OF TRANSFORMER WINDINGS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO.
- C150 C2-23 DO YOU MEASURE OUTPUT VOLTAGE OF TRANSFORMERS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO.
- C151 C2-24 DO YOU REFER TO THE BASIC TRANSFORMER SCHEMATIC SYMBOLS FOR TRANSFORMERS.
- C152 C2-25 DO YOU REFER TO THE MULTIPLE SECONDARY-WINDINGS SCHEMATIC SYMBOLS FOR TRANSFORMERS.
- C153 C2-26 DO YOU REFER TO THE MULTIPLE TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS.
- C154 C2-27 DO YOU REFER TO THE CENTER TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS.
- C155 C2-28 DO YOU REFER TO THE AIR CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS.
- C156 C2-29 DO YOU REFER TO THE IRON CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS.
- C157 C2-30 DO YOU REFER TO THE COMBINATIONS OF THE ABOVE SCHEMATIC SYMBOLS FOR TRANSFORMERS.
- C158 C2-31 DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING SCHEMATIC SYMBOLS.
- C159 C2-32 DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN TRANSFORMERS YOU WORK WITH.
- C160 C2-33 DO YOU REFER TO OR USE THE GENERAL RULE THAT THE TURNS RATIO OF A TRANSFORMER IS EQUAL TO THE VOLTAGE RATIO.
- C161 C2-34 DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN RATIOS FOR TRANSFORMERS.
- C162 C2-35 DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS USING TURNS RATIOS.
- C163 C2-36 DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS USING TURNS RATIOS.
- C164 C2-37 DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH PHASE TRANSFORMERS.
- C165 C2-38 DO YOU INSPECT 3 PHASE TRANSFORMERS.
- C166 C2-39 DO YOU CLEAN OR LUBRICATE 3 PHASE TRANSFORMERS.
- C167 C2-40 DO YOU ADJUST 3 PHASE TRANSFORMERS.
- C168 C2-41 DO YOU TROUBLESHOOT 3 PHASE TRANSFORMERS.
- C169 C2-42 DO YOU REMOVE OR REPLACE COMPLETE 3 PHASE TRANSFORMER.
- C170 C2-43 DO YOU REMOVE OR REPLACE 3 PHASE TRANSFORMER PARTS, SUCH AS A WINDING.
- C171 C3-01 DO YOU USE OR REFER TO PERMANENT MAGNETS.
- C172 C3-02 DO YOU USE OR REFER TO TEMPORARY MAGNETS.
- C173 C3-03 DO YOU USE OR REFER TO RETENTIVITY OF MAGNETIC MATERIALS.
- C174 C3-04 DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC MATERIALS.
- C175 C3-05 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS.

- C176 C3-06 DO YOU USE OR REFER TO RESIDUAL MAGNETISM.
- C177 C3-07 DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE OR FLUX.
- C178 C3-08 DO YOU USE OR REFER TO HEBER'S THEORY OF MAGNETISM.
- C179 C3-09 DO YOU USE OR REFER TO THE DOMAIN THEORY OF MAGNETISM.
- C180 C3-10 DO YOU USE OR REFER TO MAGNETIC INDUCTION.
- C181 C3-11 DO YOU USE OR REFER TO FLUX DENSITY.
- C182 C3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT FOR MAGNETIC POLES, LIKE POLES REPEL AND UNLIKE POLES ATTRACT.
- C183 C3-13 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE DIRECTION OF MAGNETIC FIELDS ABOUT STRAIGHT WIRES.
- C184 C3-14 DO YOU USE THE LEFT THUMB RULE TO FIND THE NORTH POLE OF A CURRENT CARRYING COIL.
- D RCL CIRCUITS, SERIES AND PARALLEL RESONANCE (TIME CONSTANTS), AND FILTERS
- D185 D1-01 DO YOU WORK WITH RC, LR, OR RCL CIRCUITS ON YOUR PRESENT JOB.
- D186 D1-02 DO YOU USE OR REFER TO VECTORS WHEN WORKING WITH RCL CIRCUITS.
- D187 D1-03 DO YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN WORKING WITH RCL CIRCUITS.
- D188 D1-04 DO YOU USE OR REFER TO SINE WHEN WORKING WITH RCL CIRCUITS.
- D189 D1-05 DO YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL CIRCUITS.
- D190 D1-06 DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL CIRCUITS.
- D191 D1-07 DO YOU USE OR REFER TO RATIOS WHEN WORKING WITH RCL CIRCUITS.
- D192 D1-08 DO YOU USE OR REFER TO TRUE POWER (PT) WHEN WORKING WITH RCL CIRCUITS.
- D193 D1-09 DO YOU USE OR REFER TO MAXIMUM POWER (PM) WHEN WORKING WITH RCL CIRCUITS.
- D194 D1-10 DO YOU USE OR REFER TO AVERAGE POWER (PAVE) WHEN WORKING WITH RCL CIRCUITS.
- D195 D1-11 DO YOU USE OR REFER TO APPARENT POWER (PA) WHEN WORKING WITH RCL CIRCUITS.
- D196 D1-12 DO YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING WITH RCL CIRCUITS.
- D197 D1-13 DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN WORKING WITH RCL CIRCUITS.
- D198 D1-14 DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH RCL CIRCUITS.
- D199 D1-15 DO YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH RCL CIRCUITS.
- D200 D1-16 DO YOU USE OR REFER TO RESONANT FREQUENCY WHEN WORKING WITH RCL CIRCUITS.
- D201 D1-17 DO YOU USE OR REFER TO HALF POWER POINTS WHEN WORKING WITH RCL CIRCUITS.
- D202 D1-18 DO YOU USE OR REFER TO BANDPASS REGION WHEN WORKING WITH RCL CIRCUITS.
- D203 D1-19 DO YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH RCL CIRCUITS.
- D204 D1-20 DO YOU USE OR REFER TO TANK CIRCUITS WHEN WORKING WITH RCL CIRCUITS.
- D205 D1-21 DO YOU DETERMINE VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS: SINE OF AN ANGLE = OPPOSITE SIDE DIVIDED BY HYPOTENUSE.
- D206 D1-22 DO YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS.
- D207 D1-23 DO YOU CALCULATE TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS.
- D208 D1-24 DO YOU CALCULATE PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS.
- D209 D1-25 DO YOU CALCULATE TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS.
- D210 D1-26 DO YOU CALCULATE IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS.
- D211 D1-27 DO YOU CALCULATE APPARENT POWER (PA) FOR SERIES RCL CIRCUITS.
- D212 D1-28 DO YOU CALCULATE TRUE POWER (PT) FOR SERIES RCL CIRCUITS.
- D213 D1-29 DO YOU CALCULATE POWER FACTORS (PF) FOR SERIES RCL CIRCUITS.
- D214 D1-30 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RCL CIRCUITS.
- D215 D1-31 DO YOU CALCULATE IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS.
- D216 D1-32 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING THE ASSUMED VOLTAGE METHOD.
- D217 D1-33 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING OHM'S LAW.
- D218 D1-34 DO YOU CHECK CAPACITORS USING OHMMETERS.
- D219 D1-35 DO YOU CHECK CAPACITORS USING SUBSTITUTION.
- D220 D1-36 DO YOU CHECK INDUCTORS USING OHMMETERS.
- D221 D1-37 DO YOU CHECK INDUCTORS USING SUBSTITUTION.
- D222 D1-38 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE RATIO OF PF TO 1, AND PA TO PAVE FOR RESONANT CIRCUITS.
- D223 D1-39 DO YOU CALCULATE RESONANT FREQUENCIES FOR RCL CIRCUITS.
- D224 D1-40 DO YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE RESONANT FREQUENCY FOR SERIES RCL CIRCUITS.
- D225 D1-41 DO YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT RESONANT FREQUENCY FOR PARALLEL RCL CIRCUITS.
- D226 D1-42 DO YOU USE OR REFER TO THE GENERAL RULE THAT HALF POWER POINTS ARE AT 70.7 PERCENT OF THE PEAK CURRENT VALUE.

JOB INVENTORY (DUTY/TASK TITLES)

- E283 E2-11 DO YOU CLEAN SOLDERING IRON TIPS.
- E284 E2-12 DO YOU CLEAN ELECTRICAL SURFACES USING ERASERS.
- E285 E2-13 DO YOU TIN OR PRE-TIN CONDUCTORS.
- E286 E2-14 DO YOU INSPECT SOLDERED CONNECTIONS.
- E287 E2-15 DO YOU DESOLDER CONNECTIONS BY PICKING.
- E288 E2-16 DO YOU DESOLDER CONNECTIONS USING VACUUM DESOLDERING TOOLS.
- E289 E2-17 DO YOU CUT COMPONENT LEADS TO REMOVE COMPONENTS.
- E290 E2-18 DO YOU CRUSH COMPONENTS FOR REMOVAL.
- E291 E2-19 DO YOU MAKE HARDWIRE CONNECTIONS.
- E292 E2-20 DO YOU MAKE PRINTED CIRCUIT BOARD CONNECTIONS
- E293 E2-21 DO YOU SOLDER PASSIVE COMPONENTS SUCH AS RESISTORS OR CAPACITORS ON PRINTED CIRCUIT BOARDS
- E294 E2-22 DO YOU SOLDER ACTIVE COMPONENTS SUCH AS SOLID-STATE DIODES OR TRANSISTORS ON PRINTED CIRCUIT BOARDS
- E295 E3-01 DO YOU WORK WITH RELAYS ON YOUR PRESENT JOB
- E296 E3-02 DO YOU ADJUST RELAYS
- E297 E3-03 DO YOU CLEAN RELAYS
- E298 E3-04 DO YOU INSPECT RELAYS
- E299 E3-05 DO YOU REMOVE OR REPLACE COMPLETE RELAYS
- E300 E3-06 DO YOU REMOVE OR REPLACE PARTS OF RELAYS
- E301 E3-07 DO YOU TROUBLESHOOT RELAYS
- E302 E3-08 DO YOU STRAIGHTEN RELAY CONTACTS
- E303 E3-09 DO YOU PERFORM TASKS ON RELAY CONTACTS
- E304 E3-10 DO YOU PERFORM TASKS ON RELAY CORES
- E305 E3-11 DO YOU PERFORM TASKS ON RELAY COILS
- E306 E3-12 DO YOU PERFORM TASKS ON RELAY ARMATURES
- E307 E3-13 DO YOU PERFORM TASKS ON RELAY SPRINGS
- E308 E3-14 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY OPEN (NO) SCHEMATIC SYMBOLS FOR RELAYS
- E309 E3-15 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY CLOSED (NC) SCHEMATIC SYMBOLS FOR RELAYS
- E310 E3-16 DO YOU USE OR REFER TO SINGLE POLE, DOUBLE THROW (SPDT) SCHEMATIC SYMBOLS FOR RELAYS
- E311 E3-17 DO YOU USE OR REFER TO DOUBLE POLE, DOUBLE THROW (DPDT) SCHEMATIC SYMBOLS FOR RELAYS
- E312 E3-18 DO YOU USE OR REFER TO OTHER RELAY SYMBOLS SCHEMATIC SYMBOLS FOR RELAYS
- E313 E3-19 DO YOU CHECK ELECTRICAL CONTINUITY OF COILS BY MEASURING RESISTANCE
- F MICROPHONES, SPEAKERS, AND OSCILLOSCOPES
- F314 F1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH MICROPHONES
- F315 F1-02 DO YOU INSPECT MICROPHONES
- F316 F1-03 DO YOU CLEAN MICROPHONES
- F317 F1-04 DO YOU OPERATE MICROPHONES
- F318 F1-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT PARTS OF MICROPHONES
- F319 F1-06 DO YOU TROUBLESHOOT DOWN TO MICROPHONE PARTS
- F320 F1-07 DO YOU REMOVE OR REPLACE COMPLETE MICROPHONES
- F321 F1-08 DO YOU REMOVE OR REPLACE MICROPHONE PARTS
- F322 F1-09 DO YOU PERFORM TASKS ON CARBON MICROPHONES
- F323 F1-10 DO YOU PERFORM TASKS ON CAPACITOR MICROPHONES
- F324 F1-11 DO YOU PERFORM TASKS ON CRYSTAL MICROPHONES
- F325 F1-12 DO YOU PERFORM TASKS ON DYNAMIC MICROPHONES
- F326 F1-13 DO YOU PERFORM TASKS ON DELTA-V RIBBON MICROPHONES
- F327 F2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH SPEAKERS
- F328 F2-02 DO YOU INSPECT SPEAKERS
- F329 F2-03 DO YOU CLEAN SPEAKERS
- F330 F2-04 DO YOU OPERATE SPEAKERS
- F331 F2-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT PARTS OF SPEAKERS
- F332 F2-06 DO YOU TROUBLESHOOT DOWN TO SPEAKER PARTS
- F333 F2-07 DO YOU REMOVE OR REPLACE COMPLETE SPEAKERS
- F334 F2-08 DO YOU REMOVE OR REPLACE SPEAKER PARTS
- F335 F2-09 DO YOU PERFORM ANY TASKS ON SPEAKER CONES
- F336 F2-10 DO YOU PERFORM ANY TASKS ON SPEAKER SPIDERS
- F337 F2-11 DO YOU PERFORM ANY TASKS ON SPEAKER FIELD COILS
- F338 F2-12 DO YOU PERFORM ANY TASKS ON SPEAKER VOICE COILS
- F339 F2-13 DO YOU PERFORM ANY TASKS ON SPEAKER PERMANENT MAGNETS
- F340 F2-14 DO YOU PERFORM ANY TASKS ON SPEAKER ELECTROMAGNETS
- F341 F2-15 DO YOU PERFORM ANY TASKS ON SPEAKER SOFT IRON CORES
- F342 F3-01 DO YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB
- F343 F3-02 DO YOU USE OSCILLOSCOPES TO PERFORM OPERATIONAL CHECKS
- F344 F3-03 DO YOU USE OSCILLOSCOPES TO PERFORM ALIGNMENTS OR ADJUSTMENTS
- F345 F3-04 DO YOU USE OSCILLOSCOPES TO TROUBLESHOOT ELECTRONIC CIRCUITS
- F346 F3-05 DO YOU USE OSCILLOSCOPES TO MEASURE FREQUENCY
- F347 F3-06 DO YOU USE OSCILLOSCOPES TO MEASURE TIME
- F348 F3-07 DO YOU USE OSCILLOSCOPES TO OBSERVE LISAJOUS PATTERNS
- F349 F3-08 DO YOU USE OSCILLOSCOPES TO OBSERVE SIGNALS WHILE UTILIZING ATTENUATOR PROBES
- F350 F3-09 DO YOU USE OSCILLOSCOPES TO MAKE FREQUENCY OR TIME MEASUREMENTS USING DELAY TIME MULTIPLIERS
- F351 F3-10 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE
- F352 F3-11 DO YOU USE OSCILLOSCOPES TO MEASURE OR OBSERVE SIGNALS AFTER FIRST ADJUSTING THE GAIN AND DC BAL CONTROLS
- F353 F3-12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE
- G SEMICONDUCTOR DIODES, TRANSISTORS, AND TRANSISTOR AMPLIFIERS
- G354 G1-01 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT JOB
- G355 G1-02 DO YOU INSPECT DIODES
- G356 G1-03 DO YOU REMOVE OR REPLACE DIODES
- G357 G1-04 DO YOU CHECK DIODES USING AN INSTRUMENT

JOB NO	TITLE	DESCRIPTION
6358	61-05 DO YOU USE ENERGY LEVEL DIAGRAMS IN YOUR WORK WITH DIODES	INTERPRET CIRCUIT DIAGRAMS
6359	61-06 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES, TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE, TO COMPUTE FORWARD OR REVERSE BIAS RESISTANCE	6382 61-29 DO YOU USE OR REFER TO VALENCE BAND IN SEMICONDUCTOR MATERIALS
6360	61-07 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR DIODES	6383 61-30 DO YOU USE OR REFER TO FORBIDDEN BAND IN SEMICONDUCTOR MATERIALS
6361	61-08 DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES	6384 61-31 DO YOU USE OR REFER TO CONDUCTION BAND IN SEMICONDUCTOR MATERIALS
6362	61-09 DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO OTHER ELECTRONIC COMPONENTS, SUCH AS RESISTORS, BASED ON THEIR PHYSICAL APPEARANCE	6385 61-32 DO YOU USE OR REFER TO COVALENT BONDING IN SEMICONDUCTOR MATERIALS
6363	61-10 DO YOU REFER TO OR DO YOU DETERMINE THE GENERAL EFFECTS OF DOPING ON CURRENT FLOW	6386 61-33 DO YOU USE OR REFER TO ELECTRON-HOLE PAIR CREATED IN SEMICONDUCTORS
6364	61-11 DO YOU USE OR REFER TO MEASUREMENTS OF FORWARD BIAS RESISTANCE	6387 61-34 DO YOU USE OR REFER TO ELECTRON FLOW OR HOLE FLOW IN SEMICONDUCTORS
6365	61-12 DO YOU USE OR REFER TO DIODE COLOR COOLING	6388 61-35 DO YOU USE OR REFER TO DONOR IMPURITY IN SEMICONDUCTORS
6366	61-13 DO YOU USE OR REFER TO CENTRIFUGAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS	6389 61-36 DO YOU USE OR REFER TO ACCEPTOR IMPURITY IN SEMICONDUCTORS
6367	61-14 DO YOU USE OR REFER TO CENTRIFUGAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS	6390 61-37 DO YOU USE OR REFER TO P-TYPE SEMICONDUCTOR MATERIAL
6368	61-15 DO YOU USE OR REFER TO DIODE NUMBERING SYSTEM, SUCH AS IN 538	6391 61-38 DO YOU USE OR REFER TO N-TYPE SEMICONDUCTOR MATERIAL
6369	61-16 DO YOU USE OR REFER TO KINETIC ENERGY OF AN ELECTRON MOVING IN ORBIT	6392 61-39 DO YOU USE OR REFER TO MAJORITY CARRIERS IN SEMICONDUCTORS
6370	61-17 DO YOU USE OR REFER TO POTENTIAL ENERGY OF AN ELECTRON MOVING IN ORBIT	6393 61-40 DO YOU USE OR REFER TO MINORITY CARRIERS IN SEMICONDUCTORS
6371	61-18 DO YOU USE OR REFER TO MEASUREMENTS OF REVERSE BIAS RESISTANCE	6394 61-41 DO YOU USE OR REFER TO JUNCTION RECOMBINATION IN SEMICONDUCTORS
6372	61-19 DO YOU USE OR REFER TO NUMBER OF ELECTRONS IN A PARTICULAR SHELL OR ORBIT	6395 61-42 DO YOU USE OR REFER TO DEPLETION REGION IN SEMICONDUCTORS
6373	61-20 DO YOU USE OR REFER TO PERMISSIBLE ENERGY LEVELS OF AN ORBITTING ELECTRON	6396 61-43 DO YOU USE OR REFER TO RELATIONSHIP BETWEEN BARRIER WIDTH AND DIFFERENCE OF POTENTIAL
6374	61-21 DO YOU USE OR REFER TO FORBIDDEN ENERGY LEVELS OF AN ORBITTING ELECTRON	6397 61-44 DO YOU USE OR REFER TO THE 10:1 BACK TO FRONT RESISTANCE RATIO FOR DIODES
6375	61-22 DO YOU USE OR REFER TO VALENCE ELECTRONS (THOSE IN THE OUTERMOST SHELL)	6398 61-45 DO YOU USE OR REFER TO BARRIER HEIGHT IN SEMICONDUCTORS
6376	61-23 DO YOU USE OR REFER TO ATOMIC NUMBER (TOTAL NUMBER OF ELECTRONS IN ATOM)	6399 61-46 DO YOU USE OR REFER TO DIODE SUBSTITUTION INFORMATION
6377	61-24 DO YOU USE OR REFER TO SYMBOLS ON THE DIODE WHICH INDICATE THE CATHODE END	6400 61-47 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD CURRENT DIODE RATINGS
6378	61-25 DO YOU NEED TO KNOW WHICH MATERIALS ARE USED IN THE CONSTRUCTION OF DIODES SUCH AS GERMANIUM OR SILICON	6401 61-48 DO YOU USE OR REFER TO PEAK RECURRENT FORWARD CURRENT DIODE RATINGS
6379	61-26 DO YOU NEED TO KNOW THAT SEMICONDUCTORS HAVE NEGATIVE TEMPERATURE COEFFICIENTS OF RESISTANCE (AS TEMPERATURE INCREASES RESISTANCE DECREASES)	6402 61-49 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT DIODE RATINGS
6380	61-27 DO YOU USE OR REFER TO PN JUNCTION DIODE CHARACTERISTIC CURVES, SUCH AS VOLTAGE - CURRENT CHARACTERISTIC CURVES (PERHAPS YOU DO THIS TO IDENTIFY POINTS OF STRUCTURAL BREAKDOWN OR OPERATING REGIONS)	6403 61-50 DO YOU USE OR REFER TO PEAK REVERSE (IMPERSE) VOLTAGE DIODE RATINGS
6381	61-28 DO YOU DETERMINE WHETHER PN JUNCTION DIODES ARE FORWARD BIASED OR REVERSE BIASED WHEN YOU READ OR	6404 62-01 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB?
		6405 62-02 DO YOU INSPECT TRANSISTORS
		6406 62-03 DO YOU REMOVE OR REPLACE TRANSISTORS
		6407 62-04 DO YOU CHECK TRANSISTORS USING AN INSTRUMENT AND REVERSE RESISTANCE MEASUREMENTS
		6408 62-05 DO YOU USE OR REFER TO EMITTER - BASE (EB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS
		6409 62-06 DO YOU USE OR REFER TO COLLECTOR - BASE (CB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS
		6410 62-07 DO YOU USE OR REFER TO EMITTER - COLLECTOR (EC) FORWARD AND REVERSE RESISTANCE MEASUREMENTS

RESISTANCE MEASUREMENTS
 6411 G2-08 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE EMITTER - BASE JUNCTION
 6412 G2-09 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE COLLECTOR - BASE JUNCTION
 6413 G2-10 DO YOU USE OR REFER TO THE PHYSICAL SIZE OF THE TRANSISTOR STRUCTURE (COLLECTOR, BASE AND EMITTER)
 6414 G2-11 DO YOU USE OR REFER TO LEAKAGE CURRENT (ICBO) IN A TRANSISTOR
 6415 G2-12 DO YOU USE OR REFER TO TRANSISTOR SCHEMATIC SYMBOLS
 6416 G2-13 DO YOU USE OR REFER TO TRANSISTOR NOTATION SUCH AS G1, G2, G3, ETC
 6417 G2-14 DO YOU USE OR REFER TO TRANSISTOR SUBSTITUTION INFORMATION
 6418 G2-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE TRANSISTOR BASE CURRENT IB IS NORMALLY SIGNIFICANTLY SMALLER THAN THE EMITTER CURRENT IE (USUALLY IB BEING 2 TO 8 PERCENT OF IE)
 6419 G2-16 DO YOU USE THE INFORMATION THAT THE EFFECT OF EMITTER BASE VOLTAGE ON BASE CURRENT IS THE CONTROLLING FACTOR FOR TRANSISTORS
 6420 G2-17 DO YOU USE THE GENERAL RULE THAT LEAKAGE CURRENT (ICRO) IN A TRANSISTOR INCREASES AS TEMPERATURE INCREASES
 6421 G2-18 DO YOU USE OR REFER TO TRANSISTOR CHARACTERISTIC CURVES
 6422 G2-19 DO YOU USE OR REFER TO BETA TRANSISTOR GAINS
 6423 G2-20 DO YOU USE OR REFER TO ALPHA TRANSISTOR GAINS
 6424 G2-21 DO YOU USE OR REFER TO GAMMA TRANSISTOR GAINS
 6425 G2-22 DO YOU CALCULATE BETA TRANSISTOR GAINS
 6426 G2-23 DO YOU CALCULATE ALPHA TRANSISTOR GAINS
 6427 G2-24 DO YOU CALCULATE GAMMA TRANSISTOR GAINS
 6428 G3-01 DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR PRESENT JOB
 6429 G3-02 DO YOU INSPECT TRANSISTOR AMPLIFIERS
 6430 G3-03 DO YOU ADJUST TRANSISTOR AMPLIFIERS
 6431 G3-04 DO YOU TROUBLESHOOT TO THE AMPLIFIER CIRCUIT LEVEL
 6432 G3-05 DO YOU TROUBLESHOOT TO AMPLIFIER COMPONENTS
 6433 G3-06 DO YOU REMOVE OR REPLACE THE COMPLETE AMPLIFIER
 6434 G3-07 DO YOU REMOVE OR REPLACE AMPLIFIER COMPONENTS
 6435 G3-08 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A CHANGE IN BASE CURRENT
 6436 G3-09 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A SPECIFIC CHANGE IN BASE CURRENT
 6437 G3-10 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A CHANGE IN BASE CURRENT
 6438 G3-11 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A SPECIFIC CHANGE IN BASE CURRENT
 6439 G3-12 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN BASE CURRENT WHICH RESULTS FROM AN INPUT SIGNAL
 6440 G3-13 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN BASE CURRENT WHICH RESULTS FROM A SPECIFIC INPUT SIGNAL
 6441 G3-14 DO YOU USE THE LOAD-LINE METHOD OF ANALYSIS IN YOUR CIRCUIT ANALYSIS (THIS METHOD REQUIRES YOU TO PLOT A LOAD-LINE ON A TRANSISTOR CHARACTERISTIC CURVE)
 6442 G3-15 DO YOU USE OR REFER TO THE OPERATING POINT Q (QUIESCENT POINT) FOR A TRANSISTOR
 6443 G3-16 DO YOU CALCULATE THE SPECIFIC QUIESCENT POINT FOR A PARTICULAR TRANSISTOR
 6444 G3-17 DO YOU MEASURE VOLTAGE GAIN USED IN THE COMMON EMITTER CONFIGURATION
 6445 G3-18 DO YOU MEASURE CURRENT GAIN USED IN THE COMMON EMITTER CONFIGURATION
 6446 G3-19 DO YOU MEASURE POWER GAIN USED IN THE COMMON EMITTER CONFIGURATION
 6447 G3-20 DO YOU CALCULATE THE VOLTAGE GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE IN BASE-EMITTER VOLTAGE INTO THE CHANGE THE BASE COLLECTOR VOLTAGE TO DETERMINE THE VOLTAGE GAIN
 6448 G3-21 DO YOU CALCULATE THE CURRENT GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE IN BASE CURRENT INTO THE CHANGE IN COLLECTOR CURRENT TO DETERMINE THE CURRENT GAIN
 6449 G3-22 DO YOU CALCULATE THE POWER GAIN FOR A SPECIFIC TRANSISTOR USING A FORMULA THAT IS, DO YOU MULTIPLY THE CURRENT GAIN TIMES THE VOLTAGE GAIN TO DETERMINE THE POWER GAIN
 6450 G3-23 DO YOU NEED TO KNOW THAT MORE COLLECTOR CURRENT IS GENERATED WITH LESS COLLECTOR VOLTAGE AS TEMPERATURE INCREASES (THIS AFFECTS THE STATIC OPERATING POINT Q) OF THE TRANSISTOR)
 6451 G3-24 DO YOU COMPUTE THE STATIC OPERATING POINT Q OF A TRANSISTOR AT DIFFERENT TEMPERATURES
 6452 G3-25 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH EMITTER (SWAMPING) RESISTOR STABILIZATION
 6453 G3-26 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH SELF-BIAS STABILIZATION
 6454 G3-27 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH THERMISTOR STABILIZATION
 6455 G3-28 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH FORWARD BIAS DIODE STABILIZATION
 6456 G3-29 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH REVERSE BIAS DIODE STABILIZATION

6457 G3-30 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH DOUBLE DIODE STABILIZATION

6458 G3-31 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM EMITTER (SWAMPING) RESISTOR STABILIZATION

6459 G3-32 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM SELF-BIAS STABILIZATION

6460 G3-33 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THERMISTOR STABILIZATION

6461 G3-34 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM FORWARD BIAS DIODE STABILIZATION

6462 G3-35 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM REVERSE BIAS DIODE STABILIZATION

6463 G3-36 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM SOURCE DIODE STABILIZATION

6464 G3-37 DO YOU IDENTIFY AMPLITUDE DISTORTION FOR TRANSISTOR CIRCUITS

6465 G3-38 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF AMPLITUDE DISTORTION

6466 G3-39 DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS

6467 G3-40 DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS

6468 G3-41 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF PHASE DISTORTION

6469 G3-42 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF FREQUENCY DISTORTION

6470 G3-43 DO YOU NEED TO KNOW THE DEGENERATIVE EFFECTS ON THE CIRCUIT CAUSED BY CHANGING EITHER RESISTANCE FOR TRANSISTOR AMPLIFIERS IN THE COMMON COLLECTOR CONFIGURATION

6471 G3-44 DO YOU DETERMINE THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS

6472 G3-45 DO YOU TROUBLESHOOT OR REPAIR PHASE AMPLIFIERS

6473 G3-46 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS

6474 G3-47 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY CIRCUITS

6475 G3-48 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS

6476 G3-49 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS

6477 H1-01 DO YOU USE OR REFER TO VARACTORS

6478 H1-02 DO YOU USE OR REFER TO TUNNEL DIODES

6479 H1-03 DO YOU USE OR REFER TO FIELD-EFFECT TRANSISTORS (FET)

6480 H1-04 DO YOU USE OR REFER TO UNIJUNCTION TRANSISTORS

6481 H1-05 DO YOU USE OR REFER TO ZENER DIODES

6482 H1-06 DO YOU USE OR REFER TO INTEGRATED CIRCUITS

6483 H2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH POWER SUPPLIES

6484 H2-02 DO YOU INSPECT POWER SUPPLIES

6485 H2-03 DO YOU CLEAN POWER SUPPLIES

6486 H2-04 DO YOU ALIGN OR ADJUST POWER SUPPLIES

6487 H2-05 DO YOU TROUBLESHOOT TO POWER SUPPLY CIRCUIT LEVEL

6488 H2-06 DO YOU TROUBLESHOOT TO POWER SUPPLY COMPONENTS

6489 H2-07 DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES

6490 H2-08 DO YOU REMOVE OR REPLACE POWER SUPPLY COMPONENTS

6491 H2-09 DO YOU WORK WITH HALF-WAVE RECTIFIERS

6492 H2-10 DO YOU WORK WITH FULL-WAVE RECTIFIERS OTHER THAN BRIDGE RECTIFIERS

6493 H2-11 DO YOU WORK WITH BRIDGE RECTIFIERS

6494 H2-12 DO YOU WORK WITH THREE-PHASE RECTIFIERS

6495 H2-13 DO YOU USE OR REFER TO INPUT VOLTAGE

6496 H2-14 DO YOU USE OR REFER TO INPUT FREQUENCY

6497 H2-15 DO YOU USE OR REFER TO PEAK OUTPUT VOLTAGE

6498 H2-16 DO YOU USE OR REFER TO AVERAGE OUTPUT VOLTAGE

6499 H2-17 DO YOU USE OR REFER TO RIPPLE AMPLITUDE

6500 H2-18 DO YOU USE OR REFER TO RIPPLE FREQUENCY

6501 H2-19 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE

6502 H2-20 DO YOU USE OR REFER TO SHAPE OF OUTPUT WAVEFORMS

6503 H2-21 DO YOU USE OR REFER TO EFFECTIVE OUTPUT VOLTAGE

6504 H2-22 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE FILTERS

6505 H2-23 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE FILTERS

6506 H2-24 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE INPUT L-TYPE FILTERS

6507 H2-25 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE INPUT L-TYPE FILTERS

6508 H2-26 DO YOU WORK WITH CIRCUITS WHICH EMPLOY LC PI-TYPE FILTERS

6509 H2-27 DO YOU WORK WITH CIRCUITS WHICH EMPLOY RC PI-TYPE FILTERS

6510 H2-28 DO YOU WORK WITH CIRCUITS WHICH EMPLOY DONT

6511 H2-29 DO YOU HAVE THE OPTION OF REPLACING ONE TYPE OF FILTER WITH A DIFFERENT TYPE FILTER

6512 H3-01 DO YOU WORK WITH OSCILLATORS IN YOUR PRESENT JOB

6513 H3-02 DO YOU INSPECT OSCILLATORS

6514 H3-03 DO YOU ALIGN OR ADJUST OSCILLATORS

6515 H3-04 DO YOU REMOVE OR REPLACE COMPLETE OSCILLATORS

6516 H3-05 DO YOU REMOVE OR REPLACE OSCILLATOR COMPONENTS

6517 H3-06 DO YOU TROUBLESHOOT TO OSCILLATOR CIRCUIT LEVEL

6518 H3-07 DO YOU TROUBLESHOOT TO OSCILLATOR COMPONENTS

6519 H3-08 DO YOU USE OR REFER TO FEEDBACK

6520 H3-09 DO YOU USE OR REFER TO FREQUENCY DETERMINING DEVICES (FDD)

6521 H3-10 DO YOU USE OR REFER TO AMPLITUDE STABILITY

6522 H3-11 DO YOU USE OR REFER TO FREQUENCY STABILITY

6523 H3-12 DO YOU USE OR REFER TO DAMPING

6524 H3-13 DO YOU USE OR REFER TO REGENERATIVE FEEDBACK

6525 H3-14 DO YOU USE OR REFER TO PIEZOELECTRIC EFFECT

JOB INVENTORY/TASK TITLES)	JOB INVENTORY/TASK TITLES)	JOB INVENTORY/TASK TITLES)
H526 H3-15 DO YOU USE OR REFER TO CRITICAL DAMPING	1588 12-04 DO YOU WORK WITH LIMITERS WITH BIAS	
H527 H3-16 DO YOU USE OR REFER TO UNDER DAMPING	1589 12-05 DO YOU WORK WITH ZENER DIODE LIMITERS	
H528 H3-17 DO YOU USE OR REFER TO OVER DAMPING	1590 12-06 DO YOU WORK WITH TRANSISTOR LIMITERS	
H529 H3-18 DO YOU WORK WITH OSCILLATORS WHICH USE LC TANK	1591 12-07 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF LIMITERS	
H530 H3-19 DO YOU WORK WITH OSCILLATORS WHICH USE RC NETWORKS AS	1592 12-08 DO YOU WORK WITH BASIC DIODE CLAMPING CIRCUITS	
H531 H3-20 DO YOU WORK WITH OSCILLATORS WHICH USE CRYSTALS AS	1593 12-09 DO YOU WORK WITH DIODE CLAMPING CIRCUITS WITH BIAS	
H532 H3-21 DO YOU WORK WITH OSCILLATORS WHICH USE DON'T REMEMBER	1594 12-10 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF CLAMPING	
H533 H3-22 DO YOU WORK WITH SERIES HARTLEY SINUSOIDAL	CIRCUIT	
H534 H3-23 DO YOU WORK WITH SHUNT HARTLEY SINUSOIDAL OSCILLATORS	1595 13-01 IN YOUR PRESENT JOB, DO YOU WORK ON EQUIPMENT WHICH	
H535 H3-24 DO YOU WORK WITH COLPITTS SINUSOIDAL OSCILLATORS	CONTAINS ELECTRON TUBES	
H536 H3-25 DO YOU WORK WITH CLAPP SINUSOIDAL OSCILLATORS	1596 13-02 DO YOU CHECK ELECTRON TUBES TO SEE IF THEY ARE GOOD	
H537 H3-26 DO YOU WORK WITH BUTLER SINUSOIDAL OSCILLATORS	1597 13-03 DO YOU USE TUBE TESTERS TO CHECK ELECTRON TUBES	
H538 H3-27 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF	1598 13-04 DO YOU USE MULTIMETERS TO CHECK ELECTRON TUBES	
I MULTIVIBRATORS, LIMITERS, CLAMPERS, AND ELECTRON TUBES	1599 13-05 DO YOU USE SCOPES TO CHECK ELECTRON TUBES	
1539 11-01 DO YOU WORK WITH MULTIVIBRATORS IN YOUR PRESENT JOB	1570 13-06 DO YOU USE SUBSTITUTION TO CHECK ELECTRON TUBES	
1540 11-02 DO YOU INSPECT WAVE GENERATING OR SHAPING CIRCUITS	1571 13-07 DO YOU USE OR REFER TO CUTOFF	
1541 11-03 DO YOU ALIGN OR ADJUST WAVE GENERATING OR SHAPING	1572 13-08 DO YOU USE OR REFER TO PEAK INVERSE VOLTAGE RATING	
1542 11-04 DO YOU CALIBRATE WAVE GENERATING OR SHAPING CIRCUITS	1573 13-09 DO YOU USE OR REFER TO PEAK CURRENT RATING	
1543 11-05 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING	1574 13-10 DO YOU USE OR REFER TO TRANSIT TIME	
1544 11-06 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING	1575 13-11 DO YOU USE OR REFER TO PLATE DISSIPATION RATING	
1545 11-07 DO YOU REMOVE OR REPLACE COMPLETE WAVE GENERATING OR	1576 13-12 DO YOU USE OR REFER TO SATURATION	
SHAPING CIRCUITS	1577 13-13 DO YOU USE OR REFER TO DC PLATE RESISTANCE	
1546 11-08 DO YOU REMOVE OR REPLACE WAVE GENERATING OR SHAPING	1578 13-14 DO YOU COMPUTE ACTUAL VALUES OF THE DC PLATE	
COMPONENTS	RESISTANCE FOR ELECTRON TUBES	
1547 11-09 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK	1579 13-15 DO YOU USE OR REFER TO PLATE VOLTAGE	
1548 11-10 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN RC	1580 13-16 DO YOU USE OR REFER TO PLATE CURRENT	
NETWORKS	1581 13-17 DO YOU USE OR REFER TO GRID VOLTAGE	
1549 11-11 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN	1582 13-18 DO YOU USE OR REFER TO GRID CURRENT	
CRYSTALS	1583 13-19 DO YOU USE OR REFER TO CATHODE VOLTAGE	
1550 11-12 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN DON'T	1584 13-20 DO YOU USE OR REFER TO CATHODE CURRENT	
REMEMBER WHICH TYPE OF FDD	1585 13-21 DO YOU USE OR REFER TO THE TRIODE AMPLIFICATION	
1551 11-13 DO YOU WORK WITH ASTABLE MULTIVIBRATORS	FACTOR (THE AMPLIFICATION FACTOR FOR TRIODES IS DEFINED AS	
1552 11-14 DO YOU WORK WITH MONOSTABLE MULTIVIBRATORS	THE RATIO OF CHANGE IN PLATE VOLTAGE TO A CHANGE IN GRID	
1553 11-15 DO YOU WORK WITH BISTABLE MULTIVIBRATORS	VOLTAGE)	
1554 11-16 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE	1586 13-22 DO YOU CALCULATE ACTUAL VALUES OF TRIODE	
MULTIVIBRATORS	AMPLIFICATION FACTORS	
1555 12-01 DO YOU WORK WITH LIMITERS OR CLAMPERS IN YOUR	1587 13-23 DO YOU USE OR REFER TO MULTIGRID (TETRODE, PENTODE,	
PRESENT JOB	ETC) AMPLIFICATION FACTORS	
1556 12-02 DO YOU WORK WITH SERIES DIODE LIMITERS	1588 13-24 DO YOU USE OR REFER TO ELECTRON TUBE TRANSCONDUCTANCE	
1557 12-03 DO YOU WORK WITH SHUNT DIODE LIMITERS	(G _m WHICH IS MEASURED IN MHOS)	
	1589 13-25 DO YOU CALCULATE ACTUAL VALUES OF ELECTRON TUBE	
	TRANSCONDUCTANCES	
	1590 13-26 DO YOU USE OR REFER TO THE ELECTRON TUBE PARAMETER	
	CALLED AC PLATE RESISTANCE	
	1591 13-27 DO YOU CALCULATE ACTUAL VALUES OF AC PLATE	
	RESISTANCE	
	1592 13-28 DO YOU USE OR REFER TO ELECTRON TUBE INTERELECTRODE	
	CAPACITANCE	
	1593 13-29 DO YOU USE OR REFER TO CHARACTERISTIC CURVES IN YOUR	
	WORK WITH ELECTRON TUBES	
	1594 13-30 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE	
	VOLTAGE FOR A SPECIFIED BIAS	

- 1596 J2-31 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE CURRENT FOR A SPECIFIED BIAS
- 1598 J2-32 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR CUTOFF
- 1599 J2-33 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR SATURATION
- 1598 J2-34 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER GAIN
- 1599 J2-35 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER EFFICIENCY
- 1600 J2-36 DO YOU USE TEST TUBE CHECKERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN
- 1601 J2-37 DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN
- 1602 J2-38 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN
- 1603 J2-39 DO YOU USE CHARACTERISTIC CURVES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN
- 1604 J2-40 DO YOU CALCULATE ANY ELECTRON TUBE CAPACITANCES SUCH AS INPUT CAPACITANCE
- 1605 J2-41 DO YOU USE OR REFER TO TUBE SOCKET NOTATION
- 1606 J2-42 DO YOU USE OR REFER TO PIN NUMBERING SYSTEMS
- 1607 J2-43 DO YOU USE OR REFER TO THE TYPE OF MATERIAL OR THE OPERATING TEMPERATURE OF THE EMITTING SURFACE IN THE ELECTRON TUBES YOU WORK ON
- 1608 J2-44 DO YOU USE OR REFER TO TUBE SUBSTITUTION MATERIAL SUCH AS MANUALS OR CHARTS
- J ELECTRON TUBE AMPLIFIERS AND CIRCUITS, SPECIAL PURPOSE ELECTRON TUBES, METEODYNAMIC MODULATION, PRESENT JOB
- J609 J2-01 DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS IN YOUR PRESENT JOB
- J610 J2-02 DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS
- J611 J2-03 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS
- J612 J2-04 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS
- J613 J2-05 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS
- J614 J2-06 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS
- J615 J2-07 DO YOU TROUBLESHOOT OR REPAIR DONAT KNOW WHICH TYPE OF AMPLIFIER WITH GAS TUBES (HOT CATHODE OR COLD CATHODE)
- J616 J2-08 DO YOU WORK WITH CATHODE-RAY TUBES
- J617 J2-09 DO YOU USE OR REFER TO THE CHARACTERISTICS OF BEAM POWER TUBES
- J618 J2-10 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH BEAM POWER TUBES ARE USED
- J619 J2-11 DO YOU USE OR REFER TO THE CHARACTERISTICS OF THYRATRONS
- J620 J2-12 DO YOU USE OR REFER TO THE CHARACTERISTICS OF OPERATION OF THYRATRONS ARE USED
- J621 J2-06 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH THYRATRONS ARE USED
- J622 J2-07 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTRON GUNS OF CATHODE-RAY TUBES (CRT)
- J623 J2-08 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROMAGNETIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)
- J624 J2-09 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)
- J625 J2-10 DO YOU USE OR REFER TO PHOSPHOR SCREENS
- J626 J2-11 DO YOU USE OR REFER TO AQUADAG COATINGS
- J627 J2-12 DO YOU USE OR REFER TO ELECTRON OPTICS
- J628 J2-13 DO YOU USE OR REFER TO PERSISTENCE
- J629 J2-14 DO YOU USE OR REFER TO DECAY TIMES
- J630 J2-15 DO YOU USE OR REFER TO FLUORESCENCE
- J631 J2-16 DO YOU USE OR REFER TO PHOSPHORESCENCE
- J632 J2-01 DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB
- J633 J2-02 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS
- J634 J2-03 DO YOU PERFORM TASKS ON FREQUENCY MIXERS
- J635 J2-04 DO YOU USE OR REFER TO THE METEODYNAMIC OF SIGNALS IN YOUR WORK WITH TRANSMIT OR RECEIVE SYSTEMS
- J636 J2-05 DO YOU PERFORM TASKS ON REACTANCE MODULATORS
- J637 J2-06 DO YOU PERFORM TASKS ON MODULATED OSCILLATORS
- X AM SYSTEMS, FM SYSTEMS, AND NUMBERING SYSTEMS
- K638 KI-01 DO YOU WORK ON AM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB
- K639 KI-02 DO YOU INSPECT AM TRANSMIT OR RECEIVE SYSTEMS
- K640 KI-03 DO YOU CLEAN AM TRANSMIT OR RECEIVE SYSTEMS
- K641 KI-04 DO YOU ALIGN OR ADJUST AM TRANSMIT OR RECEIVE SYSTEMS
- K642 KI-05 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE SYSTEMS
- K643 KI-06 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE COMPONENTS
- K644 KI-07 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE SYSTEMS
- K645 KI-08 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE COMPONENTS
- K646 KI-09 DO YOU PERFORM TASKS ON RF OSCILLATORS
- K647 KI-10 DO YOU PERFORM TASKS ON RF AMPLIFIERS
- K648 KI-11 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS
- K649 KI-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS
- K650 KI-13 DO YOU PERFORM TASKS ON LOCAL OSCILLATORS
- K651 KI-14 DO YOU PERFORM TASKS ON IF AMPLIFIERS
- K652 KI-15 DO YOU PERFORM TASKS ON DETECTORS
- K653 KI-16 DO YOU PERFORM TASKS ON DONAT REMEMBER WHICH AM STAGE
- K654 KI-17 DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN TRANSMITTERS
- K655 KI-18 DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN TRANSMITTERS

K659 K1-19 DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS
 K657 K1-20 DO YOU USE OR REFER TO SELECTIVITY OF RECEIVERS
 K658 K1-21 DO YOU USE OR REFER TO 2ND HARMONIC DISTORTION
 K659 K1-22 DO YOU USE OR REFER TO BANDPASS DISTORTION
 K660 K1-23 DO YOU USE OR REFER TO SQUARE LAW DISTORTION
 K661 K1-24 DO YOU USE OR REFER TO CO-CHANNEL INTERFERENCE
 K662 K1-25 DO YOU USE OR REFER TO IMAGE FREQUENCIES IN RECEIVERS
 K663 K1-26 DO YOU USE OR REFER TO SIGNAL TO IMAGE RATIOS OR
 IMAGE REJECTION RATIOS
 K664 K1-27 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM
 TRANSMITTER SCHEMATIC DIAGRAMS
 K665 K1-28 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM
 RECEIVER SCHEMATIC DIAGRAMS
 K666 K2-01 DO YOU WORK WITH FM TRANSMIT OR RECEIVE SYSTEMS IN
 YOUR PRESENT JOB
 K667 K2-02 DO YOU INSPECT FM TRANSMIT OR RECEIVE SYSTEMS
 K668 K2-03 DO YOU CLEAN FM TRANSMIT OR RECEIVE SYSTEMS
 K669 K2-04 DO YOU ALIGN FM TRANSMIT OR RECEIVE SYSTEMS
 K670 K2-05 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE
 SYSTEMS
 K671 K2-06 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE
 COMPONENTS
 K672 K2-07 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE
 SYSTEMS
 K673 K2-08 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE
 COMPONENTS
 K674 K2-09 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS
 K675 K2-10 DO YOU PERFORM TASKS ON FREQUENCY MULTIPLIERS
 K676 K2-11 DO YOU PERFORM TASKS ON DRIVERS (INTERMEDIATE
 AMPLIFIERS)
 K677 K2-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS
 K678 K2-13 DO YOU PERFORM TASKS ON RF AMPLIFIERS
 K679 K2-14 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS
 K680 K2-15 DO YOU PERFORM TASKS ON IF AMPLIFIERS
 K681 K2-16 DO YOU PERFORM TASKS ON LIMITERS
 K682 K2-17 DO YOU PERFORM TASKS ON FREQUENCY DISCRIMINATORS
 K683 K2-18 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH
 SCHEMATIC DIAGRAMS OF FM TRANSMITTERS
 K684 K2-19 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH
 SCHEMATIC DIAGRAMS OF FM RECEIVERS
 K685 K3-01 DO YOU CONVERT DECIMAL (BASE 10) NUMBERS TO OCTAL
 (BASE 8) NUMBERS
 K686 K3-02 DO YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2)
 NUMBERS
 K687 K3-03 DO YOU CONVERT OCTAL NUMBERS TO DECIMAL NUMBERS
 K688 K3-04 DO YOU CONVERT OCTAL NUMBERS TO BINARY NUMBERS
 K689 K3-05 DO YOU CONVERT BINARY NUMBERS TO DECIMAL NUMBERS
 K690 K3-06 DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS
 K691 K3-07 DO YOU ADD BINARY NUMBERS TO GET A SUM
 K692 K3-08 DO YOU SUBTRACT BINARY NUMBERS USING THE END-AROUND-
 CARRY METHOD
 K693 K3-09 DO YOU SUBTRACT BINARY NUMBERS USING THE DIRECT
 CARRY METHOD

1897 L1-03 DO YOU CONSTRUCT TRUTH TABLES FOR OR LOGIC SYMBOLS
 OR GATES
 1898 L1-04 DO YOU CONSTRUCT TRUTH TABLES FOR AND OR LOGIC
 SYMBOLS WITH STATE INDICATORS
 1899 L1-05 DO YOU CONSTRUCT TRUTH TABLES FOR EXCLUSIVE OR LOGIC
 SYMBOLS OR GATES
 1900 L1-06 DO YOU USE OR REFER TO TRUTH TABLES FOR AND LOGIC
 SYMBOLS OR GATES
 1901 K1-07 DO YOU USE OR REFER TO TRUTH TABLES FOR OR LOGIC
 SYMBOLS OR GATES
 1902 K1-08 DO YOU USE OR REFER TO TRUTH TABLES FOR AND OR OR
 LOGIC SYMBOLS WITH STATE INDICATORS
 1903 L1-09 DO YOU USE OR REFER TO TRUTH TABLES FOR EXCLUSIVE OR
 LOGIC SYMBOLS
 1904 L1-10 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR AND GATES
 1905 L1-11 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR OR GATES
 1906 L1-12 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR NAND OR NOR
 GATES
 1907 L1-13 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR EXCLUSIVE
 OR GATES
 1908 L2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS
 RELATING TO BOOLEAN EQUATIONS, LOGIC DIAGRAMS, OR LOGIC
 CIRCUITS
 1909 L2-02 DO YOU DRAW LOGIC SYMBOLS FOR DIRECT COUPLED
 TRANSISTOR LOGIC (DCTL) CIRCUITS
 1910 L2-03 DO YOU CONSTRUCT TRUTH TABLES FOR CURRENT MODE LOGIC
 (CML) CIRCUITS
 1911 L2-04 DO YOU DRAW LOGIC DIAGRAMS FROM GIVEN BOOLEAN
 EQUATIONS
 1912 L2-05 DO YOU MEASURE INPUTS OR OUTPUTS OF LOGIC GATES
 1913 L2-06 DO YOU DEVELOP OR ANALYZE BOOLEAN EQUATIONS IN THE
 PROCESS OF TROUBLESHOOTING DIGITAL CIRCUITS
 1914 L2-07 DO YOU ANALYZE LOGIC CIRCUITS BY USING BOOLEAN
 ALGEBRA
 1915 L2-08 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR DIRECT
 COUPLED TRANSISTOR LOGIC (DCTL) CIRCUIT GATES
 1916 L2-09 DO YOU USE OR REFER TO TRUTH TABLES FOR CURRENT MODE
 LOGIC (CML) CIRCUITS
 1917 L2-10 DO YOU USE OR REFER TO LOGIC DIAGRAMS CONSISTING OF
 MORE THAN ONE GATE
 1918 L2-11 DO YOU COMPUTE SUM AND CARRY EXPRESSIONS FOR SERIAL
 HALF OR FULL ADDER LOGIC DIAGRAMS
 1919 L2-12 DO YOU TRACE DATA FLOW THROUGH PARALLEL FULL ADDER

- L720 L2-13 DO YOU WORK WITH ASTABLE (FREE RUNNING) MULTIVIBRATORS
 - L721 L2-14 DO YOU WORK WITH BISTABLE (FLIP-FLOP) MULTIVIBRATORS
 - L722 L2-15 DO YOU WORK WITH MONOSTABLE (ONE-SHOT) MULTIVIBRATORS
 - L723 L2-16 DO YOU USE OR REFER TO FLIP-FLOP MULTIVIBRATOR SYMBOLS
 - L724 L2-17 DO YOU USE OR REFER TO SINGLE-SHOT MULTIVIBRATOR SYMBOLS
 - L725 L2-18 DO YOU USE OR REFER TO FLIP-FLOP CIRCUIT DIAGRAMS
 - L726 L2-19 DO YOU USE OR REFER TO FLIP-FLOP TRUTH TABLES
 - L727 L2-20 DO YOU USE OR REFER TO COMPLEMENTED FLIP-FLOP LOGIC SYMBOLS
 - L728 L2-21 DO YOU USE OR REFER TO COMPLEMENTING FLIP-FLOP LOGIC SYMBOLS
 - L729 L2-22 DO YOU MEASURE OUTPUT WAVESHAPES OF LOGIC CIRCUITS
 - L730 L2-23 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTED FLIP-FLOP SCHEMATIC DIAGRAMS
 - L731 L2-24 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTING FLIP-FLOP SCHEMATIC DIAGRAMS
 - L732 L2-25 DO YOU CONSTRUCT TRUTH TABLES FOR J-K FLIP-FLOP LOGIC SYMBOLS
 - L733 L3-01 DO YOU WORK WITH DIGITAL COUNTERS IN YOUR PRESENT JOB
 - L734 L3-02 DO YOU USE OR REFER TO UP-COUNTERS
 - L735 L3-03 DO YOU USE OR REFER TO DOWN-COUNTERS
 - L736 L3-04 DO YOU USE OR REFER TO SERIAL COUNTERS
 - L737 L3-05 DO YOU USE OR REFER TO PARALLEL COUNTERS
 - L738 L3-06 DO YOU USE OR REFER TO RING COUNTERS
 - L739 L3-07 DO YOU USE OR REFER TO DECADE COUNTERS
 - L740 L3-08 DO YOU USE OR REFER TO COUNT DETECT CIRCUITS
 - L741 L3-09 DO YOU USE OR REFER TO UP CLOCKS
 - L742 L3-10 DO YOU USE OR REFER TO DOWN CLOCKS
 - L743 L3-11 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS
 - L744 L3-12 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-FLOPS
 - L745 L3-13 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF DECADE COUNTERS
 - L746 L3-14 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF RING COUNTERS
 - L747 L3-15 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER
 - L748 L3-16 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS
 - L749 L3-17 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF COUNTERS
 - L750 L3-18 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS
 - L751 L3-19 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENT-
 - L752 L3-20 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER
 - L753 L3-21 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR OTHER TYPES OF COUNTERS
 - L754 L3-22 DO YOU CONSTRUCT TRUTH TABLES FROM LOGIC DIAGRAMS OF DECADE COUNTERS
 - L755 L3-23 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP IN RING COUNTERS FOR SPECIFIC INPUT PULSES
 - L756 L3-24 DO YOU DETERMINE THE APPROPRIATE AND GATE NECESSARY IN COUNT DETECT CIRCUITS TO INDICATE A REQUIRED COUNT
- N TIMING CIRCUITS, USE OF SIGNAL GENERATORS, MOTORS, AND GENERATORS
- M757 M1-01 DO YOU WORK WITH SAWTOOTH WAVE GENERATORS
 - M758 M1-02 DO YOU WORK WITH TRAPEZOIDAL WAVE GENERATORS
 - M759 M1-03 DO YOU WORK WITH PULSED OSCILLATORS WITH REGENERATIVE FEEDBACK
 - M760 M1-04 DO YOU WORK WITH PULSED OSCILLATORS WITHOUT REGENERATIVE FEEDBACK
 - M761 M1-05 DO YOU WORK WITH BLOCKING OSCILLATORS
 - M762 M1-06 DO YOU USE OR REFER TO RISE TIME
 - M763 M1-07 DO YOU USE OR REFER TO FALL OR FLYBACK TIME
 - M764 M1-08 DO YOU USE OR REFER TO SWEEP TIME
 - M765 M1-09 DO YOU USE OR REFER TO ELECTRICAL LENGTH OF SAWTOOTH WAVEFORMS
 - M766 M1-10 DO YOU USE OR REFER TO PHYSICAL LENGTH OF SAWTOOTH WAVEFORMS
 - M767 M1-11 DO YOU USE OR REFER TO LINEAR SLOPE OF SAWTOOTH WAVEFORMS
 - M768 M1-12 DO YOU USE OR REFER TO GATE LENGTH OF SAWTOOTH WAVEFORMS
 - M769 M2-01 DO YOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB
 - M770 M2-02 DO YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL GENERATORS
 - M771 M2-03 DO YOU PERFORM PERIODIC MAINTENANCE SUCH AS ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL GENERATORS
 - M772 M2-04 DO YOU TROUBLESHOOT TO AN ASSEMBLY OR SUBASSEMBLY WHILE USING SIGNAL GENERATORS
 - M773 M2-05 DO YOU TROUBLESHOOT TO THE SMALLEST REPLACEABLE COMPONENT WHILE USING SIGNAL GENERATORS
 - M774 M2-06 DO YOU USE AUDIO SINE-WAVE GENERATORS
 - M775 M2-07 DO YOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH AS SQUARE WAVE, TRIANGLE, PULSE, OR SPIKE
 - M776 M2-08 DO YOU USE RF GENERATORS LESS THAN 1,000 MH
 - M777 M2-09 DO YOU USE RF GENERATORS GREATER THAN 1,000 MH
 - M778 M2-10 DO YOU USE OTHER SPECIAL PURPOSE OR MULTI-FUNCTION GENERATORS
 - M779 M3-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING

- N 817 N1-10 DO YOU USE OR REFER TO VOLTMETER SENSITIVITY (EXPRESSED IN UNITS OF OHMS PER VOLT)
 - N 818 N2-01 DO YOU WORK WITH SATURABLE REACTORS OR MAGNETIC AMPLIFIERS IN YOUR PRESENT JOB
 - N 819 N2-02 DO YOU INSPECT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS
 - N 820 N2-03 DO YOU CLEAN MAGNETIC AMPLIFIERS OR SATURABLE REACTORS
 - N 821 N2-04 DO YOU ADJUST MAGNETIC AMPLIFIERS OR SATURABLE REACTORS
 - N 822 N2-05 DO YOU TROUBLESHOOT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS
 - N 823 N2-06 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIERS OR SATURABLE REACTORS
 - N 824 N2-07 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIER OR SATURABLE REACTOR COMPONENTS
 - N 825 N2-08 DO YOU USE OR REFER TO HYSTERESIS CURVES OR LOOPS
 - N 826 N2-09 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE REACTORS
 - N 827 N2-10 DO YOU MEASURE OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE REACTORS
 - N 828 N2-11 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS FOR MAGNETIC AMPLIFIERS
 - N 829 N2-12 DO YOU USE OR REFER TO COERCIVE FORCE IN SATURABLE REACTORS
 - N 830 N2-13 DO YOU USE OR REFER TO RESIDUAL MAGNETISM IN SATURABLE REACTORS
 - N 831 N2-14 DO YOU USE OR REFER TO FLUX DENSITY IN SATURABLE REACTORS
 - N 832 N2-15 DO YOU USE OR REFER TO POINT OF SATURATION IN SATURABLE REACTORS
 - N 833 N2-16 DO YOU USE OR REFER TO SATURABLE REACTOR SCHEMATIC SYMBOLS
 - N 834 N3-01 DO YOU WORK WITH WAVESHAPING CIRCUITS IN YOUR PRESENT JOB
 - N 835 N3-02 DO YOU USE OR REFER TO TRANSIENT INTERVALS
 - N 836 N3-03 DO YOU USE OR REFER TO PULSE WIDTH (PW)
 - N 837 N3-04 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)
 - N 838 N3-05 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)
 - N 839 N3-06 DO YOU USE OR REFER TO DIFFERENTIATING CIRCUITS
 - N 840 N3-07 DO YOU USE OR REFER TO INTEGRATING CIRCUITS
 - N 841 N3-08 DO YOU USE OR REFER TO THE CLASSIFICATION OF TIME CONSTANTS (TC) AS LONG, MEDIUM, OR SHORT
 - N 842 N3-09 DO YOU DETERMINE WHETHER AN LR OR RC CIRCUIT IS DIFFERENTIATING OR INTEGRATING BASED ON THE TIME CONSTANT AND OUTPUT CONFIGURATION
 - N 843 N3-10 DO YOU WORK WITH SQUARE WAVE GENERATORS
 - N 844 N3-11 DO YOU WORK WITH RECTANGULAR WAVE GENERATORS
- WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS OR GENERATORS
- N 780 N3-02 DO YOU INSPECT MOTORS
 - N 781 N3-03 DO YOU CLEAN OR LUBRICATE MOTORS
 - N 782 N3-04 DO YOU OPERATE MOTORS
 - N 783 N3-05 DO YOU REMOVE OR REPLACE COMPLETE MOTORS
 - N 784 N3-06 DO YOU REMOVE OR REPLACE MOTOR PARTS
 - N 785 N3-07 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF MOTORS
 - N 786 N3-08 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS
 - N 787 N3-09 DO YOU PERFORM ANY TASKS ON FIELD COILS
 - N 788 N3-10 DO YOU PERFORM ANY TASKS ON ARMATURES
 - N 789 N3-11 DO YOU PERFORM ANY TASKS ON ROTORS
 - N 790 N3-12 DO YOU PERFORM ANY TASKS ON BRUSHES
 - N 791 N3-13 DO YOU PERFORM ANY TASKS ON SLIP RINGS
 - N 792 N3-14 DO YOU PERFORM ANY TASKS ON COMMUTATORS
 - N 793 N3-15 DO YOU PERFORM ANY TASKS ON POLL PIECES
 - N 794 N3-16 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OF THE FORCE OR TORQUE CREATED BY A MOTOR
 - N 795 N3-17 DO YOU DETERMINE OR MEASURE THE DIRECTION OF THE MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR
 - N 796 N3-18 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OR DIRECTION OF THE INDUCED VOLTAGE IN MOTORS
 - N 797 N3-19 DO YOU WORK WITH SYNCHRONOUS MOTORS
 - N 798 N3-20 DO YOU WORK WITH INDUCTION MOTORS
 - N 799 N3-21 DO YOU WORK WITH SPLIT-PHASE MOTORS
 - N 800 N3-22 DO YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS
 - N 801 N3-23 DO YOU INSPECT GENERATORS
 - N 802 N3-24 DO YOU CLEAN OR LUBRICATE GENERATORS
 - N 803 N3-25 DO YOU OPERATE GENERATORS
 - N 804 N3-26 DO YOU REMOVE OR REPLACE COMPLETE GENERATORS
 - N 805 N3-27 DO YOU REMOVE OR REPLACE GENERATOR PARTS
 - N 806 N3-28 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF GENERATORS
 - N 807 N3-29 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF GENERATORS
- METER MOVEMENTS, SATURABLE REACTORS, MAGNETIC AMPLIFIERS, AND WAVESHAPING CIRCUITS
- N 808 N1-01 DO YOU WORK WITH METERS IN YOUR PRESENT JOB
 - N 809 N1-02 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF PERMANENT MAGNETS
 - N 810 N1-03 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF MOVING COILS
 - N 811 N1-04 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF SPIRAL SPRINGS
 - N 812 N1-05 DO YOU READ METER SCALES
 - N 813 N1-06 DO YOU EXTEND THE RANGE OF AMMETERS
 - N 814 N1-07 DO YOU ZERO OHMMETERS
 - N 815 N1-08 DO YOU ZERO AMMETERS
 - N 816 N1-09 DO YOU EXTEND THE RANGE OF VOLT-METERS

JOB INVENTORIDUITY/TASK TITLES

- 0881 02-07 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS
- 0882 02-08 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEM COMPONENTS
- 0883 02-09 DO YOU WORK ON PULSE-AMPLITUDE MODULATION (PAM) SYSTEMS
- 0884 02-10 DO YOU WORK ON PULSE-DURATION MODULATION (PDM) SYSTEMS
- 0885 02-11 DO YOU WORK ON PULSE-POSITION MODULATION (PPM) SYSTEMS
- 0886 02-12 DO YOU WORK ON PULSE-CODE MODULATION (PCM) SYSTEMS
- 0887 02-13 DO YOU WORK ON LINE PULSING MODULATION SYSTEMS
- 0888 02-14 DO YOU WORK ON DON'T REMEMBER WHICH TYPE OF MODULATION SYSTEM
- 0889 02-15 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER SUPPLIES
- 0890 02-16 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM CHARGING CHOKES AND CHARGING DIODES
- 0891 02-17 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE FORMING NETWORKS
- 0892 02-18 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TUNERS
- 0893 02-19 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM SWITCHES SUCH AS GAS THYRATONS
- 0894 02-20 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE TRANSFORMERS
- 0895 02-21 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TRANSMITTER TUBES
- 0896 02-22 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM AMPLIFIERS
- 0897 02-23 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM FREQUENCY CONVERTERS
- 0898 02-24 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM IF AMPLIFIERS
- 0899 02-25 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DETECTORS
- 0900 02-26 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM VIDEO AMPLIFIERS
- 0901 02-27 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER VIDEO AMPLIFIERS
- 0902 02-28 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DON'T REMEMBER WHICH PULSE MODULATION SYSTEM STAGES (PRF)
- 0903 02-29 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)
- 0904 02-30 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)
- 0905 02-31 DO YOU USE OR REFER TO PULSE WIDTH (PW)
- 0906 02-32 DO YOU USE OR REFER TO PULSE SHAPE
- 0907 02-33 DO YOU USE OR REFER TO PEAK POWER
- 0908 02-34 DO YOU USE OR REFER TO AVERAGE POWER
- 0909 02-35 DO YOU CALCULATE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)
- 0910 02-36 DO YOU MEASURE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)
- 0845 01-01 DO YOU WORK ON SINGLE SIDEBAND SYSTEMS IN YOUR PRESENT JOB
- 0846 01-02 DO YOU INSPECT SSB TRANSMIT OR RECEIVE SYSTEMS
- 0847 01-03 DO YOU CLEAN SSB TRANSMIT OR RECEIVE SYSTEMS
- 0848 01-04 DO YOU ALIGN SSB TRANSMIT OR RECEIVE SYSTEMS
- 0849 01-05 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE SYSTEMS
- 0850 01-06 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE COMPONENTS
- 0851 01-07 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE SYSTEMS
- 0852 01-08 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE COMPONENTS
- 0853 01-09 DO YOU PERFORM TASKS ON SSB AUDIO AMPLIFIERS
- 0854 01-10 DO YOU PERFORM TASKS ON SSB BALANCED MODULATORS
- 0855 01-11 DO YOU PERFORM TASKS ON SSB CARRIER OSCILLATORS
- 0856 01-12 DO YOU PERFORM TASKS ON SSB LC FILTERS
- 0857 01-13 DO YOU PERFORM TASKS ON SSB CRYSTAL FILTERS
- 0858 01-14 DO YOU PERFORM TASKS ON SSB MECHANICAL FILTERS
- 0859 01-15 DO YOU PERFORM TASKS ON SSB OSCILLATORS
- 0860 01-16 DO YOU PERFORM TASKS ON SSB MIXERS
- 0861 01-17 DO YOU PERFORM TASKS ON SSB DRIVERS
- 0862 01-18 DO YOU PERFORM TASKS ON SSB POWER AMPLIFIERS
- 0863 01-19 DO YOU PERFORM TASKS ON SSB RF AMPLIFIERS
- 0864 01-20 DO YOU PERFORM TASKS ON SSB FREQUENCY CONVERTERS
- 0865 01-21 DO YOU PERFORM TASKS ON SSB IF AMPLIFIERS
- 0866 01-22 DO YOU PERFORM TASKS ON SSB DEMODULATORS
- 0867 01-23 DO YOU PERFORM TASKS ON SSB DON'T REMEMBER WHICH SSB SYSTEM STAGES
- 0868 01-24 DO YOU USE OR REFER TO SELECTIVE FADING
- 0869 01-25 DO YOU USE OR REFER TO PEAK POWER
- 0870 01-26 DO YOU USE OR REFER TO FREQUENCY STABILITY
- 0871 01-27 DO YOU USE OR REFER TO RESPONSE CURVES FOR BANDWIDTH FILTERS
- 0872 01-28 DO YOU CALCULATE PEAK POWER OR EFFECTIVE POWER OF SSB TRANSMITTERS
- 0873 01-29 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB TRANSMITTER SCHEMATIC DIAGRAMS
- 0874 01-30 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB RECEIVER SCHEMATIC DIAGRAMS
- 0875 02-01 DO YOU WORK ON PULSE MODULATION SYSTEMS IN YOUR PRESENT JOB
- 0876 02-02 DO YOU INSPECT PULSE MODULATION SYSTEMS
- 0877 02-03 DO YOU CLEAN PULSE MODULATION SYSTEMS
- 0878 02-04 DO YOU ALIGN PULSE MODULATION SYSTEMS
- 0879 02-05 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS
- 0880 02-06 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEM COMPONENTS

969	PI-17 DO YOU CALCULATE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES	P002 P2-19 DO YOU USE OR REFER TO "A" WALL OF WAVEGUIDES
970	PI-18 DO YOU PERFORM THE CALCULATIONS NECESSARY TO DETERMINE THE IMPEDANCE AND LENGTH OF QUARTER - WAVELENGTH MATCHING TRANSFORMERS TO MATCH TRANSMISSION LINES TO LOADS	P003 P2-20 DO YOU USE OR REFER TO "B" WALL OF WAVEGUIDES
971	PI-19 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING MATCHING TRANSFORMERS	P004 P2-21 DO YOU USE OR REFER TO CUTOFF FREQUENCY OF WAVEGUIDES
972	PI-20 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING DELTA MATCHING	P005 P2-22 DO YOU USE OR REFER TO FREQUENCY-DETERMINING WALL OF WAVEGUIDES
973	PI-21 DO YOU SELECT THE TYPE OF TRANSMISSION LINE NEEDED FOR PARTICULAR JOBS WITHOUT REFERRING TO TECHNICAL DATA	P006 P2-23 DO YOU USE OR REFER TO POWER-DETERMINING WALL OF WAVEGUIDES
974	PI-22 DO YOU USE OR REFER TO THE TERM CHARACTERISTIC IMPEDANCE (Z ₀) OF TRANSMISSION LINES	P007 P2-24 DO YOU USE OR REFER TO ELECTRIC FIELD BOUNDARY CONDITIONS
975	PI-23 DO YOU CALCULATE THE CHARACTERISTIC IMPEDANCE (Z ₀) OF TRANSMISSION LINES	P008 P2-25 DO YOU USE OR REFER TO MAGNETIC FIELD BOUNDARY CONDITIONS
976	PI-24 DO YOU USE OR REFER TO THE TERM CUTOFF FREQUENCY OF TRANSMISSION LINES	P009 P2-26 DO YOU USE OR REFER TO DUPLEXER FIELD BOUNDARY CONDITIONS
977	PI-25 DO YOU USE OR REFER TO THE TERM VELOCITY FACTOR (K) OF TRANSMISSION LINES	P010 P2-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST WAVEGUIDES ARE MADE WITH A "B" WALL SIZE OF .7 WAVELENGTHS OF THE OPERATING FREQUENCY
978	PI-26 DO YOU COMPUTE THE ELECTRICAL LENGTH OF TRANSMISSION LINES FOR PARTICULAR FREQUENCIES	P011 P2-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST "A" WALLS RANGE FROM .2 TO .5 WAVELENGTHS IN SIZE, WITH .35 USED AS AN AVERAGE
979	PI-27 DO YOU CONSTRUCT TRANSMISSION LINES OF PARTICULAR ELECTRICAL LENGTH FOR GIVEN FREQUENCIES	P012 P2-29 ARE YOU CONCERNED WITH THE MATERIAL (SUCH AS BRASS) WHICH WAVEGUIDES ARE MADE OF
980	PI-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT AS THE FREQUENCY INCREASES AND THE PHYSICAL LENGTH OF TRANSMISSION LINES REMAIN CONSTANT, THE ELECTRICAL LENGTH INCREASES	P013 P2-30 DO YOU COMPUTE THE LENGTH OF A WAVEGUIDE FOR SPECIFIC INSTALLATION
981	PI-29 DO YOU WORK WITH NON-RESONANT (FLAT) TRANSMISSION LINES	P014 P2-31 DO YOU USE THE RIGHT HAND RULE TO DETERMINE THE DIRECTION OF PROPAGATION, DIRECTION OF "E" FIELD, OR DIRECTION OF "H" FIELD IN WAVEGUIDES
982	PI-30 DO YOU WORK WITH RESONANT TRANSMISSION LINES	P015 P2-32 DO YOU USE OR REFER TO THE TIME PHASE OF PEAK "E" OR "H" LINES IN WAVEGUIDES
983	PI-31 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING STUB MATCHING	P016 P2-33 DO YOU MEASURE THE TIME PHASE OF "E" OR "H" LINES IN WAVEGUIDES
984	PI-32 DO YOU WORK WITH WAVEGUIDES OR CAVITY RESONATORS IN YOUR PRESENT JOB	P017 P2-34 DO YOU USE OR REFER TO THE SPACE QUADRATURE OF "E" OR "H" LINES IN WAVEGUIDES
985	PI-33 DO YOU INSPECT WAVEGUIDES OR CAVITY RESONATORS	P018 P2-35 ARE HIGH POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH
986	PI-34 DO YOU CLEAN WAVEGUIDES OR CAVITY RESONATORS	P019 P2-36 ARE LOW POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH
987	PI-35 DO YOU BEND WAVEGUIDES OR CAVITY RESONATORS	P020 P2-37 ARE LOOPS USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH
988	PI-36 DO YOU TWIST WAVEGUIDES OR CAVITY RESONATORS	P021 P2-38 ARE APERTURES (WINDOWS OR LENSES) USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH
989	PI-37 DO YOU PURGE WAVEGUIDES OR CAVITY RESONATORS	P022 P2-39 ARE DONUTS REMEMBER THE KIND OF ENERGY COUPLING USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH
990	PI-38 DO YOU TROUBLESHOOT WAVEGUIDES OR CAVITY RESONATORS	P023 P2-40 DO YOU DETERMINE WHERE PROBES SHOULD BE MOUNTED IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA
991	PI-39 DO YOU REMOVE OR INSTALL COMPLETE WAVEGUIDES	P024 P2-41 DO YOU DETERMINE THE POSITIONING OF LOOPS IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA
992	PI-40 DO YOU REMOVE OR INSTALL WAVEGUIDE SECTIONS	P025 P2-42 DO YOU DETERMINE THE POSITIONING OR SIZE OF APERTURES IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA
993	PI-41 DO YOU REMOVE OR INSTALL DUMMY LOADS	P026 P2-43 ARE CHOKE JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS
994	PI-42 DO YOU REMOVE OR INSTALL DUMMY LOADS	
995	PI-43 DO YOU REMOVE OR INSTALL E BENDS	
996	PI-44 DO YOU REMOVE OR INSTALL H BENDS	
997	PI-45 DO YOU REMOVE OR INSTALL OTHER BENDS	
998	PI-46 DO YOU REMOVE OR INSTALL CHOKE JOINTS	
999	PI-47 DO YOU REMOVE OR INSTALL ROTATING JOINTS	
1000	PI-48 DO YOU REMOVE OR INSTALL BI-DIRECTIONAL COUPLERS	
1001	PI-49 DO YOU REMOVE OR INSTALL BI-DIRECTIONAL COUPLERS	

JOB INVENTORY/TASK TITLES

- P065 P3-32 DO YOU CLEAN MAGNETRONS
- P066 P3-33 DO YOU ADJUST MAGNETRONS
- P067 P3-34 DO YOU TUNE MAGNETRONS
- P068 P3-35 DO YOU PERFORM OPERATIONAL CHECKS OF MAGNETRONS
- P069 P3-36 DO YOU TROUBLESHOOT MAGNETRONS
- P070 P3-37 DO YOU REMOVE OR REPLACE COMPLETE MAGNETRON COMPONENTS
- P071 P3-38 DO YOU REMOVE OR REPLACE MAGNETRON COMPONENTS
- P072 P3-39 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS COLLECTOR PLATES
- P073 P3-40 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER CAVITIES
- P074 P3-41 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER GRIDS
- P075 P3-42 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS FEEDBACK LOOPS
- P076 P3-43 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS DRIFT SPACES
- P077 P3-44 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER GRIDS
- P078 P3-45 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER CAVITIES
- P079 P3-46 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CONTROL GRIDS
- P080 P3-47 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATHODES
- P081 P3-48 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON REPELLER (REFLECTOR) PLATES
- P082 P3-49 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRIDS
- P083 P3-50 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRID CAVITY GAPS
- P084 P3-51 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON RESONANT CAVITIES
- P085 P3-52 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON MAGNETIC COUPLING LOOPS
- P086 P3-53 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON FILAMENTS
- P087 P3-54 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON CATHODES
- P088 P3-55 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON OUTPUT LEADS
- P089 P3-56 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES FILAMENTS
- P090 P3-57 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES CATHODES
- P091 P3-58 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MODULATOR GRIDS
- P092 P3-59 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ANODES
- P093 P3-60 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES HELICES
- P094 P3-61 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF
- P027 P2-44 ARE ROTATING JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH
- P028 P2-45 ARE DUNST REMEMBER THE KIND OF JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH
- P029 P2-46 DO YOU TUNE CAVITY RESONATORS USING CAPACITIVE TUNING
- P030 P2-47 DO YOU TUNE CAVITY RESONATORS USING INDUCTIVE TUNING
- P031 P2-48 DO YOU TUNE CAVITY RESONATORS USING VOLUME TUNING
- P032 P2-49 DO YOU TUNE CAVITY RESONATORS USING DON'T REMEMBER THE METHOD OF TUNING
- P033 P2-50 DO YOU MEASURE THE FREQUENCY OF SIGNALS IN CAVITY RESONATORS
- P034 P3-01 IN YOUR PRESENT JOB DO YOU WORK WITH KLYSTRONS, TRAVELING WAVE TUBES (TWT), PARAMETRIC AMPLIFIERS, OR MAGNETRONS
- P035 P3-02 DO YOU USE OR REFER TO INTERELECTRODE CAPACITANCE
- P036 P3-03 DO YOU USE OR REFER TO ELECTRON TRANSIT TIME
- P037 P3-04 DO YOU USE OR REFER TO LEAD INDUCTANCE
- P038 P3-05 DO YOU USE OR REFER TO RF LOSSES IN EXTERNAL CIRCUITRY
- P039 P3-06 DO YOU USE OR REFER TO PRINCIPLE OF ELECTRON VELOCITY MODULATION
- P040 P3-07 DO YOU USE OR REFER TO ELECTRON BUNCHING
- P041 P3-08 DO YOU WORK WITH TWO-CAVITY KLYSTRONS
- P042 P3-09 DO YOU WORK WITH THREE-CAVITY KLYSTRONS
- P043 P3-10 DO YOU WORK WITH REFLEX KLYSTRONS
- P044 P3-11 DO YOU WORK WITH TRAVELING-WAVE TUBES (TWT)
- P045 P3-12 DO YOU WORK WITH NONDEGENERATIVE PARAMETRIC AMPLIFIERS
- P046 P3-13 DO YOU WORK WITH UP-CONVERTER PARAMETRIC AMPLIFIERS
- P047 P3-14 DO YOU WORK WITH MAGNETRONS
- P048 P3-15 DO YOU INSPECT KLYSTRONS OR TWT
- P049 P3-16 DO YOU CLEAN KLYSTRONS OR TWT
- P050 P3-17 DO YOU TUNE KLYSTRONS OR TWT ELECTRICALLY
- P051 P3-18 DO YOU TUNE KLYSTRONS OR TWT MECHANICALLY
- P052 P3-19 DO YOU PERFORM OPERATIONAL CHECKS OF KLYSTRONS OR TWT
- P053 P3-20 DO YOU TROUBLESHOOT KLYSTRONS OR TWT
- P054 P3-21 DO YOU REMOVE OR REPLACE COMPLETE KLYSTRON OR TWT
- P055 P3-22 DO YOU REMOVE OR REPLACE KLYSTRON OR TWT COMPONENTS
- P056 P3-23 DO YOU INSPECT PARAMETRIC AMPLIFIERS
- P057 P3-24 DO YOU CLEAN PARAMETRIC AMPLIFIERS
- P058 P3-25 DO YOU ADJUST PARAMETRIC AMPLIFIERS
- P059 P3-26 DO YOU TUNE PARAMETRIC AMPLIFIERS
- P060 P3-27 DO YOU PERFORM OPERATIONAL CHECKS OF PARAMETRIC AMPLIFIERS
- P061 P3-28 DO YOU TROUBLESHOOT PARAMETRIC AMPLIFIERS
- P062 P3-29 DO YOU REMOVE OR REPLACE COMPLETE PARAMETRIC AMPLIFIER
- P063 P3-30 DO YOU REMOVE OR REPLACE PARAMETRIC AMPLIFIER COMPONENTS
- P064 P3-31 DO YOU INSPECT MAGNETRONS

JOB INVENTORY/DUTY/TASK TITLES

0095	TRAVELING-WAVE TUBES COLLECTORS	0125	DO YOU USE OR REFER TO LOGIC SYMBOL OF DELAY LINES
0096	TRAVELING-WAVE TUBES MAGNETS	0126	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
0097	TRAVELING-WAVE TUBES ATTENUATORS	0127	DO YOU COMPUTE OUTPUT VOLTAGES FOR ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT VOLTAGES
0098	CIRCULATORS	0128	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
0099	CAVITIES	0129	DO YOU COMPUTE ANALOG VOLTAGES FOR GIVEN BINARY COUNTS IN ELECTRONIC DIGITAL-TO-ANALOG (D/A) CONVERTERS
0100	CAVITIES	0130	DO YOU PERFORM SAMPLE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS
0101	ISOLATORS	0131	DO YOU PERFORM HOLD FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS
0102	BIAS BATTERIES	0132	DO YOU PERFORM COMPARE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS
0103	DIODES	0133	DO YOU PERFORM DIGIT/IF FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS
0104	ISOLATORS	0134	DO YOU PERFORM DON'T REMEMBER WHICH FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS
0105	ISOLATORS	0135	DO YOU USE OR REFER TO SAMPLE FUNCTION OF A/D CONVERTERS
0106	ISOLATORS	0136	DO YOU USE OR REFER TO HOLD FUNCTION OF A/D CONVERTERS
0107	ISOLATORS	0137	DO YOU USE OR REFER TO COMPARE FUNCTION OF A/D CONVERTERS
0108	ISOLATORS	0138	DO YOU USE OR REFER TO DIGITAL FUNCTION OF A/D CONVERTERS
0109	ISOLATORS	0139	DO YOU PERFORM ANY TASKS ON MECHANICAL ANALOG-TO-DIGITAL (A/D) CONVERTERS
0110	REGISTERS, STORAGE DEVICES, AND DIGITAL TO ANALOG CONVERTERS	0140	PHANTASTRONS, SCHMITT TRIGGERS, AND CABLE FABRICATION
0111	DO YOU USE OR REFER TO STORAGE REGISTERS	0141	DO YOU WORK WITH PHANTASTRON CIRCUITRY IN YOUR PRESENT JOB
0112	DO YOU USE OR REFER TO SHIFT REGISTERS	0142	DO YOU WORK WITH SCHMITT TRIGGER CIRCUITS
0113	DO YOU USE OR REFER TO LOGIC SYMBOLS OF STORAGE REGISTERS	0143	DO YOU TRACE DATA FLOW THROUGH SCHMITT TRIGGER SCHEMATIC DIAGRAMS
0114	DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	0144	DO YOU USE OR REFER TO SCHMITT TRIGGER LOGIC SYMBOLS IN YOUR PRESENT JOB
0115	DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF REGISTERS	0145	DO YOU FABRICATE MULTICONDUCTOR CABLES
0116	DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES HAVE PASSED	5	INPUT/OUTPUT DEVICES, PHOTO SENSITIVE DEVICES, AND SYNCHRONOUS VIBRATIONS
0117	DO YOU WORK WITH DIGITAL COUNTERS, REGISTERS, OR STORAGE DEVICES IN YOUR PRESENT JOB		
0118	DO YOU USE OR REFER TO DELAY LINES		
0119	DO YOU USE OR REFER TO MAGNETIC CORES		
0120	DO YOU USE OR REFER TO MAGNETIC DRUMS		
0121	DO YOU USE OR REFER TO MAGNETIC TAPES		
0122	DO YOU USE OR REFER TO ACCESS TIME OR SPEED OF MEMORY SYSTEMS		
0123	DO YOU USE OR REFER TO WORD CAPACITY OF MEMORY SYSTEMS		
0124	DO YOU USE OR REFER TO VOLATILITY OF MEMORY SYSTEMS		

5146	S146	SI-01	DO YOU PERFORM ANY TASKS ON VISUAL READOUT SYSTEMS	T181	T1-23	DO YOU PERFORM TASKS ON OCULAR LENSES
5147	S1-02	DO YOU PERFORM ANY TASKS ON MIXIE LIGHTS OR MIXIE LIGHT DECODER SYSTEMS	T182	T1-24	DO YOU PERFORM TASKS ON CORRECTION LENSES	
5148	S1-03	DO YOU ANALYZE MIXIE LIGHT DECODER SYSTEMS USING BOOLEAN ALGEBRA	T183	T1-25	DO YOU PERFORM TASKS ON FILTERS	
5149	S2-01	DO YOU WORK WITH PHOTO TUBES IN YOUR PRESENT JOB	T184	T1-26	DO YOU PERFORM TASKS ON SPHERICAL MIRRORS	
5150	S3-01	DO YOU WORK WITH CHOPPER CIRCUITS	T185	T1-27	DO YOU PERFORM TASKS ON PLANE MIRRORS	
5151	S3-02	DO YOU MEASURE EXCITATION FREQUENCIES	T186	T2-01	DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH LASERS	
5152	S3-03	DO YOU MEASURE VOLTAGE-CURRENT RELATIONSHIPS	T187	T2-02	DO YOU INSPECT LASER SYSTEMS	
5153	S3-04	DO YOU USE OR REFER TO EXCITATION FREQUENCIES	T188	T2-03	DO YOU CLEAN LASER SYSTEMS	
5154	S3-05	DO YOU USE OR REFER TO VOLTAGE-CURRENT PHASE RELATIONSHIPS	T189	T2-04	DO YOU OPERATE LASER SYSTEMS	
5155	S3-06	DO YOU USE SERVICES IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	T190	T2-05	DO YOU OPERATE LASER SYSTEMS	
5156	S3-07	DO YOU USE DETECTORS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	T191	T2-06	DO YOU TROUBLESHOOT WIRE CONNECTIONS OF LASER SYSTEMS	
5157	S3-08	DO YOU USE ERROR SIGNAL DEVICES IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	T192	T2-07	DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF LASER SYSTEMS	
5158	S3-09	DO YOU USE COMPARISON CIRCUITS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	T193	T2-08	DO YOU TROUBLESHOOT TO COMPONENT PARTS OF LASER SYSTEMS	
Y INFRARED, LASERS, AND DISPLAY TUBES						
5159	T1-01	DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH INFRARED SYSTEMS	T194	T2-09	DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF LASER SYSTEMS	
5160	T1-02	DO YOU INSPECT INFRARED SYSTEMS	T195	T2-10	DO YOU REMOVE OR REPLACE COMPONENT PARTS OF LASER SYSTEMS	
5161	T1-03	DO YOU CLEAN INFRARED SYSTEMS	T196	T2-11	DO YOU USE OR REFER TO ANGSTROMS (A)	
5162	T1-04	DO YOU ADJUST OR CALIBRATE INFRARED SYSTEMS	T197	T2-12	DO YOU USE OR REFER TO ELECTRON ENERGY LEVELS	
5163	T1-05	DO YOU OPERATE INFRARED SYSTEMS	T198	T2-13	DO YOU USE OR REFER TO GROUND STATE	
5164	T1-06	DO YOU TROUBLESHOOT WIRE CONNECTIONS OF INFRARED SYSTEMS	T199	T2-14	DO YOU USE OR REFER TO EXCITED STATE	
5165	T1-07	DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF INFRARED SYSTEMS	T200	T2-15	DO YOU USE OR REFER TO PACKET OF RADIATION	
5166	T1-08	DO YOU TROUBLESHOOT DOWN TO INFRARED SYSTEM COMPONENT PARTS	T201	T2-16	DO YOU USE OR REFER TO PHOTONS	
5167	T1-09	DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF INFRARED SYSTEMS	T202	T2-17	DO YOU USE OR REFER TO SPONTANEOUS EMISSION	
5168	T1-10	DO YOU REMOVE OR REPLACE INFRARED SYSTEM COMPONENT PARTS	T203	T2-18	DO YOU USE OR REFER TO STIMULATED EMISSION	
5169	T1-11	DO YOU USE OR REFER TO FAR REGION	T204	T2-19	DO YOU USE OR REFER TO COHERENCE OR INCOHERENCE	
5170	T1-12	DO YOU USE OR REFER TO INTERMEDIATE REGION	T206	T2-20	DO YOU USE OR REFER TO INVERSION LEVEL	
5171	T1-13	DO YOU USE OR REFER TO NEAR REGION	T207	T2-21	DO YOU USE OR REFER TO MONOCHROMATIC	
5172	T1-14	DO YOU USE OR REFER TO MICRON	T208	T2-22	DO YOU WORK WITH ACTIVE MATERIALS	
5173	T1-15	DO YOU USE OR REFER TO GRAY BODIES	T209	T2-23	DO YOU WORK WITH PUMPING SOURCES	
5174	T1-16	DO YOU USE OR REFER TO BLACK BODIES	T210	T2-24	DO YOU WORK WITH FULL SILVERED (100% REFLECTIVE) MIRRORS	
5175	T1-17	DO YOU USE OR REFER TO ABSORPTION	T211	T2-25	DO YOU WORK WITH HALF SILVERED (92% REFLECTIVE) MIRRORS	
5176	T1-18	DO YOU USE OR REFER TO SCATTERING	T212	T2-26	DO YOU WORK WITH HELICAL FLASHTUBES	
5177	T1-19	DO YOU USE OR REFER TO EXCLUDE ZERO	T213	T2-27	DO YOU WORK WITH RUBY	
5178	T1-20	DO YOU PERFORM TASKS ON BLITZ	T214	T2-28	DO YOU WORK WITH HELIUM-NEON	
5179	T1-21	DO YOU PERFORM TASKS ON TARGET BUTTONS	T215	T2-29	DO YOU WORK WITH HELIUM-XENON	
5180	T1-22	DO YOU PERFORM TASKS ON ERECTOR LENSES	T216	T2-30	DO YOU WORK WITH XENON	
			T217	T2-31	DO YOU WORK WITH CESIUM-HELIUM	
			T218	T2-32	DO YOU WORK WITH ARGON	
			T219	T2-33	DO YOU WORK WITH NEODYMIUM IN GLASS	
			T220	T2-34	DO YOU WORK WITH GALLIUM ARSENIDE	
			T221	T3-01	IN YOUR PRESENT JOB DO YOU WORK WITH DISPLAY TUBES, SUCH AS DIRECT VIEW STORAGE (DVS) OR MULTIPLE MODE STORAGE TUBES (MMS)	
			T222	T3-02	DO YOU INSPECT DUST OR MMS	
			T223	T3-03	DO YOU CLEAN DUST OR MMS	

T223 T3-04 DO YOU ADJUST OR CALIBRATE DVST OR MMST
 T224 T3-05 DO YOU OPERATE SYSTEMS THAT CONTAIN DVST OR MMST
 T225 T3-06 DO YOU TROUBLESHOOT DVST OR MMST
 CIRCUITS
 T226 T3-07 DO YOU REMOVE OR REPLACE DVST OR MMST TUBES FROM
 MAJOR ASSEMBLIES OR UNITS
 T227 T3-08 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME
 THE VARIOUS ELEMENTS OF DVST
 T228 T3-09 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME
 THE VARIOUS ELEMENTS OF MMST
 T229 T3-10 DO YOU PERFORM TASKS ON FLOOD GUNS
 T230 T3-11 DO YOU PERFORM TASKS ON WRITE GUNS
 T231 T3-12 DO YOU PERFORM TASKS ON ATTACK GUNS
 T232 T3-13 DO YOU PERFORM TASKS ON ERASE GUNS
 T233 T3-14 DO YOU PERFORM TASKS ON STORAGE GRIDS

U PROGRAMMING, DB AND POWER RATIOS

U234 U1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY PROGRAMMING
 TASKS
 U235 U1-02 DO YOU USE OR REFER TO DECIMAL SYSTEMS
 U236 U1-03 DO YOU USE OR REFER TO PROGRAMS
 U237 U1-04 DO YOU USE OR REFER TO HEXIDECIMAL SYSTEMS
 U238 U1-05 DO YOU USE OR REFER TO R-4-2-1 SYSTEMS
 U239 U1-06 DO YOU USE OR REFER TO FOUR SYSTEMS
 U240 U1-07 DO YOU USE OR REFER TO BINARY SYSTEMS
 U241 U1-08 DO YOU USE OR REFER TO TIME-SHARING
 U242 U1-09 DO YOU USE OR REFER TO DATA WORDS
 U243 U1-10 DO YOU USE OR REFER TO ADDRESS WORDS
 U244 U1-11 DO YOU USE OR REFER TO ADDRESS/SUBADDRESS
 U245 U1-12 DO YOU USE OR REFER TO STEERING/INFORMATION
 U246 U1-13 DO YOU USE OR REFER TO INFORMATION WORDS
 U247 U1-14 DO YOU PERFORM TASKS ON SINGLE LEVEL PROGRAMMING
 U248 U1-15 DO YOU PERFORM TASKS ON MULTI-LEVEL PROGRAMMING
 U249 U1-16 DO YOU PERFORM TASKS ON INPUT DEVICES
 U250 U1-17 DO YOU PERFORM TASKS ON STORAGE DEVICES
 U251 U1-18 DO YOU PERFORM TASKS ON ARITHMETIC SECTIONS
 U252 U1-19 DO YOU PERFORM TASKS ON CONTROL SECTIONS
 U253 U1-20 DO YOU PERFORM TASKS ON OUTPUT SECTIONS
 U254 U1-21 DO YOU PERFORM TASKS ON POWER SUPPLIES
 U255 U2-01 DO YOU USE DECIBELS TO EXPRESS AMPLIFICATION AND
 ATTENUATION
 U256 U2-02 DO YOU USE LOGARITHMS TO COMPUTE OUTPUT POWER IN
 DECIBELS
 U257 U2-03 DO YOU USE LOGARITHMS TO COMPUTE ATTENUATION IN
 DECIBELS

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<p>This report summarizes the results of the administration of the Electronics Principles survey to airmen assigned to Integrated Avionics Component Specialties including 326X1C, Manual Avionics AGE Test Station Operator, 326X1D, Automatic Avionics AGE Test Station Operator; and 326X1E, Avionics AGE Operator of Internal and External Penetration Aids. The report gives a detailed listing of the technical tasks and knowledge needed to perform the jobs within the specialty or career ladder.</p> <p style="text-align: right;"><i>Continued</i></p>												

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This specialty has the following functions:

Inspects, troubleshoots, repairs, modifies, calibrates, and certifies integrated avionics systems components at the immediate level by utilizing shop aerospace ground test equipment. Identifies and isolates malfunctions of airborne electronic equipment. Disassembles, repairs, reassembles, aligns modifies and conducts checkout of integrated avionic components. Supervises integrated avionics component maintenance personnel.