Pretest Module 16 Unit 1

1. How does rectified DC power differ from DC power from a pure DC source?
2. What is half-wave DC power? (Draw Diagram)
3. What is full-wave DC power? (Draw Diagram)
4. What is the minimum PIV rating for a diode that is to be used on a 120V system?
5. What is the minimum PIV rating for a diode that is to be used on a 240V system?
6. What is the minimum PIV rating for a diode that is to be used on a 30V system?
7. What are the two types of full-wave rectifier circuits?
8. How is a full-wave bridge rectifier constructed?
9. What is the result of one diode being reversed in a full-wave biphase rectifier?
10. What voltage value must the diodes be rated for in a full-wave biphase rectifier?
11. How many diodes are required for a full-wave bridge rectifier?
12. What ohmmeter reading on the supply (connected either polarity) indicates a correctly connected full-wave bridge rectifier?
13. What is “ripple frequency”?
14. What is the ripple frequency for a full-wave bridge rectifier connected to a 60 cycle source?

Task 2

1. What is the purpose of filter circuits for rectified DC power?
2. What are the two main types of filters for rectified DC power circuits?
3. What two factors determine the average output voltage when filters are used on a rectified DC circuit?
4. How are electrolytic capacitors connected in a rectified DC circuit?
5. What is the maximum PIV rating of the diode when maximum filtering is used on a rectified DC power circuit?
6. What precaution should be taken before working on a filtering circuit for DC rectified power?

7. What is a “choke” filter?

8. What is an “LC” filter?

9. What is a “PI” filter?

10. What are the five filter design considerations?

Task 3

1. What value of AC voltage is used to calculate power in a circuit?

2. What value of AC voltage is used to calculate PIV value in rectifier circuits?

3. What value of AC voltage is used to calculate what a DC meter would indicate?

4. What is the formula for calculating $E_{av}$ when you know $E_{max}$?

5. What is the formula for calculating $E_{rms}$ when you know $E_{max}$?

6. What is $E_{av}$ if $E_{rms} = 120V$? (2 steps)

7. What is $E_{rms}$ if $E_{av} = 120V$? (2 steps)

8. What is $E_{max}$ if $E_{rms} = 120V$?

9. What is $E_{max}$ if $E_{av} = 120V$?

10. How does $E_{av}$ for a half-wave circuit compare to full-wave rectified DC?

11. What is the formula for power in a full-wave rectifier circuit?

12. What is the formula for power in a half-wave rectifier circuit?

13. Calculate the power in a full-wave rectified circuit when an ammeter at the load reads 8 amps and a voltmeter reads 6 volts. (2 steps)

14. Calculate the power in a full-wave rectified circuit when an ammeter at the load reads 3 amps and a voltmeter reads 10 volts. (2 steps)

15. Calculate the power in a half-wave rectified circuit when an ammeter at the load reads 2 amps and a voltmeter reads 12 volts.
16. Calculate the power in a half-wave rectified circuit when an ammeter at the load reads 7 amps and a voltmeter reads 16 volts.