Unit 1

1. What is an acute angle?
2. What is an obtuse angle?
3. What is the sum of the angles in any triangle?
4. Similar triangles have the same ________ but different ________.
5. What is an equilateral triangle?
6. What is a right angle triangle?
7. What is the hypotenuse of a triangle?
8. What is the Pythagorean theorem?
9. What is the term used to describe a straight line that shows quantity and direction?
10. Which side of a triangle is opposite the right angle?
11. What are opposite and adjacent sides and how are they distinguished?
12. What are the two methods for finding trig values for an angle?
13. What is the length of the hypotenuse if a triangle has sides of 6 and 8 cm?
14. What is the length of the unknown side of a triangle if the hypotenuse is 15 cm
   and the known side is 10 cm?
15. What is an impedance triangle?
16. Which parts of an impedance triangle are the resistance, reactance, and
   impedance?
17. What is a power triangle?
18. Which parts of a power triangle are the true power, reactive power, and apparent
   power?
19. What is the angle of “theta” if R=15 and Z=20?

20. What is the value of X if R=15 and Z=20?

**Unit 3**

1. What is the name for the part of an alternator where voltage is induced?

2. What is the main advantage of using small conductors for the rotor of an alternator?

3. What material is typically used for slip rings?

4. What material is typically used for brushes?

5. Do brushes in an alternator rotate?

6. What is the meaning of the term “Prime mover”?

7. In what direction does current flow within a source? (Modules)

8. What is a sine wave?

9. How fast will a 6 pole alternator turn to produce a 50 hertz waveform?

10. How fast will a 2 pole alternator turn to produce a 25 hertz waveform?

11. How many poles does an alternator have if it produces a 30 hertz waveform while turning 1800 rpm?

12. How many poles does an alternator have if it produces a 30 hertz waveform while turning 900 rpm?
13. What is the frequency of a waveform produced by a 4 pole alternator turning at 450 rpm?

14. What is the frequency of a waveform produced by a 6 pole alternator turning at 3600 rpm?

15. What are three reasons for using alternating current?

16. What are some situations that require Direct Current?

17. What is the term used to describe current that changes in both magnitude and direction?

18. What term describes the distance from one point on a waveform to where it starts to repeat itself?

19. What is the term used to describe that part of a wave from where it crosses the “x” axis to where it crosses again?

20. What is the term used to describe the time it takes for a waveform to complete one cycle?

21. What is the term used to describe the number of completed cycles in one second?

22. What is peak value of a sine wave?

23. What is peak-to-peak value of a sine wave?

24. How is the instantaneous value of a sine wave determined at a particular degree of the cycle?

25. What is the “effective value” of AC voltage?

26. What is the “average value” of an AC sine wave?

27. What is the “rms” value of an AC sine wave?

28. What is “skin effect”?
29. Is skin effect increased by higher or lower frequency?

30. What is hysteresis loss?

31. What are eddy currents?

32. What is dielectric loss?

33. Why can’t effective resistance of an AC circuit be measured with an ohmmeter?

34. What is the formula for calculating resistance in an AC circuit when power and current are known?

35. What is the factor for changing the peak value of a sine wave to an effective value?

36. What is the factor for changing the peak value of a sine wave to an average value?

37. What is the peak value if the effective value of a sine wave is 45 volts?

38. What is the average value of a sine wave if the peak value is 120 volts?

39. What is the average value of a sine wave if the effective value is 77 volts?