1. What are three reasons for improving power factor? Reduce energy costs, increase system capacity, and Increase distribution efficiency.

2. What is the result of overcorrecting the power factor? Wasted power in the circuit.

3. What is the result of power factor correction on the load itself? None

4. How is a capacitor connected into a circuit when it is used for power factor correction? Parallel

5. Why is a series resonant circuit avoided when connecting capacitors? It could result in dangerously low opposition to current flow and high currents.

6. What is the advantage of connecting a capacitor across the load for correction? It is disconnected when the individual load is disconnected keeping the circuit stable.

7. Why are switches installed on large capacitors at the service entrance? Ease of maintenance.

8. What are the four values typically found on capacitors? Voltage, Frequency, Vars, and Phase.

9. Which component of a capacitor is typically damaged by a high voltage? Dielectric

10. Why is it important to connect the capacitor to the proper frequency? Frequency affects Kvar rating and the wrong frequency can cause overheating.

11. Why is it important to connect the capacitor with the proper kvars rating? Different Kvar ratings affect the circuit in different ways.
12. How does the frequency affect the kvars rating? Kvar rating is inversely proportional to frequency. If frequency doubles, Kvars will be half.

13. Will an increase in voltage affect the kvars of a capacitor directly or indirectly? Vars are the product of current and voltage so the increase in voltage will affect directly (voltage) and indirectly (amperage).

14. Which mathematical function of the phase angle is equal to the power factor? Cos theta = Power Factor

15. List all the formulas for power factor. PF = R/Z, PF = cos theta, PF = KW/KVA

16. What is the power factor in a circuit that results in a tall, narrow power triangle? Less than 50%

17. What is the power factor in a circuit that results in a short, wide power triangle? Higher than 50%

18. What does a short vertical side indicate on a power triangle? Good power factor (near 100%)

19. What is the true power of a circuit with VA = 265 and PF = 90%? 238.5 VA

20. What is the power factor of a circuit with VA = 1560 and Vars = 800? 85.8%

21. What is the apparent power of a circuit with Watts = 750 and PF = 78%? 961 VA

22. How are large power factor correction capacitors rated? Kvars

23. How many vars would be required to correct a circuit to 95% if the power factor is 60% and apparent power is 256 VA? 153.6 W 160.2 Vars