

Chapter 8

1. Differentiate between active power, reactive power, and apparent power.
2. List three types of electrical power apparatus that draw lagging vars, and list two types that draw leading vars.
3. Sketch an energy flow diagram showing an induction motor, a capacitor, a resistance heater, a generator, and a prime mover. Assume the reactive power drawn by the capacitor is less than the reactive power drawn by the motor.
4. What is the difference between power factor and efficiency?
5. Sketch the power diagram of an induction motor, showing active, reactive, and apparent power components. What is the mathematical relationship between them?
6. How can a capacitor be used to improve the power factor of a distribution system? Illustrate with a diagram.
7. What is the disadvantage of operating a system at low power factor?
8. What ill effects can be caused by misapplication of capacitors?
9. If a system is operating at a low lagging power factor, will raising the power factor to unity increase or decrease the current? Explain.