

## Electrical Power Distribution Systems Final Exam

1. With regards to *transformer losses*, in general, a heavily loaded transformer has lower losses, and therefore has \_\_\_\_\_, than when it is lightly loaded.
  - a. lower life cycle cost
  - b. longer life expectancy
  - c. higher life cycle cost
  - d. shorter life expectancy
2. Considering *line regulation*, the voltage drop for primary lines shall not exceed:
  - a. 5 percent
  - b. 3 percent
  - c. 10 percent
  - d. 2 percent
3. With respect to *cable types*, lead-sheathed cable is generally used for *submarine* (underwater) installations and is usually:
  - a. carbon-composite
  - b. clad in poly-vinyl chloride
  - c. annealed-magnesium
  - d. armored
4. In determining the *strength requirements* and the adequate physical and structural requirements for *overhead* system support *poles*, the designer should refer to \_\_\_\_\_ and ANSI C2.
  - a. ASTM-E2018
  - b. Fink and Beaty, Standard Handbook for Electrical Engineers
  - c. National Electrical Institute Wiring and Distribution Reference Volume 2
  - d. United States Steel Structural Design Guide, 2005 Edition
5. Considering *hardware* for *overhead systems*, in locations sensitive to electromagnetic interference, primary lines should be installed:
  - a. overhead
  - b. in parallel
  - c. underground
  - d. inside lead pipes

6. *Capacitors* raise voltage levels by reducing the reactive line losses associated with \_\_\_\_\_ between the capacitor installation and the power supply.
- a. resistance
  - b. electro-magnetic interference
  - c. reactive current flow
  - d. current distortion
7. Where an *underwater* cable crossing is subjected to flow or tidal currents, \_\_\_\_\_ are usually required to prevent excessive drifting or shifting of the cable along the bottom.
- a. trenches
  - b. conduits
  - c. stand-offs
  - d. anchors
8. Regarding *underground* cable insulation *advantages*, \_\_\_\_\_ are thermosetting, solid dielectric compounds with excellent electrical insulation properties, good chemical resistance and physical strength characteristics, and both remain flexible at low temperatures.
- a. both XLP and EPR
  - b. PVC and XLP
  - c. both butyl rubber and EPR
  - d. cambric and silicone-rubber
9. A \_\_\_\_\_ *substation* is a unit substation in which the low-voltage section is above 1000 volts.
- a. load center secondary
  - b. secondary unit rated
  - c. articulated unit
  - d. primary unit rated
10. With regards to *transformers*, primary unit *substations* require less land space, are visually less objectionable, and because of the integrated transformer to secondary connection, \_\_\_\_\_ than separate substation transformers and secondary protective devices.
- a. are less reliable.
  - b. are more reliable
  - c. are more complicated
  - d. are more difficult to install