Ans Unit 12 Electrical Wiring Commercial

1. What is the CEC definition of “Utilization Equipment”? Utilizes electric energy for mechanical, chemical, heating, lighting, or similar purpose

2. What information is used by the Electrician to determine connection details for appliances? Plans, Specs, and Nameplate data

3. What condition must be met for a motor to be controlled by a standard single-pole switch? Rated 125% of the motor current

4. Does an across-the-line manual motor starter require an additional disconnect switch for a motor? No (If it is marked “suitable for motor disconnect”)

5. Is an isolating switch permissible for a motor disconnecting means? Yes (If marked “Do not open under load”)

6. What is the maximum distance for a disconnecting means from a motor? 9 m and in sight

7. What is the maximum distance for a disconnecting means from AC equipment? 3 m and in sight

8. Is a disconnect switch for motor permitted to be installed more than 9 m away? Yes (If it can be locked in the off position)

9. What is the minimum amperage rating for conductors supplying a motor with a nameplate rating of 18 A? 22.5 A (125%)

10. What is the minimum size conductor (R90 in conduit) required for the motor above? No.14 AWG

11. What are three conditions that must be met for a motor not to require overload protection? 1. 1 HP or less 2. Continuously attended 3. 15 A OC protection (or less)

12. What size overload protection is required for the motor in question 9 if the service factor is 1.10? 20.7 A (18 x 115%)

13. What size overload protection is required for the motor in question 9 if the service factor is 1.15? 22.5 A (18 x 125%)

14. When using the percentages listed in Table 29 for motor overcurrent protection and the result does not correspond to a standard fuse size, do we go to the next larger or smaller value? Smaller

15. What is the maximum allowable percentage of the motor FLA for an instant-trip circuit breaker? 1300%

16. What is the maximum allowable percentage of the motor FLA for a time-delay fuse? 175%

17. What is the maximum allowable percentage of the motor FLA for a time-delay fuse if it won’t start on a 175% fuse? 225% (Only allowed to go over 175% if you try it and it won’t start)

18. Is it permissible to connect two motors to the same branch circuit? Yes (If conditions are met)

19. What is the minimum allowable ampacity of feeders feeding three motors with FLA ratings of 20 A, 15 A, and 10 A? 50 A (20x1.25+15+10)

20. What is the minimum allowable ampacity of feeders feeding three motors with FLA ratings of 50 A, 25 A, and 20 A? 107.5 A (50x1.25+25+20)

21. What is the minimum size R90 copper conductor (3 in cable) for the feeder above? No.3 AWG

22. What is the maximum size non-time-delay fuse for the feeder in Question 20? 175 A (50x3+25+20) then next smaller fuse size listed in Table 13
23. All electrical equipment must be bonded to ground. True or False (False. Not if double insulated)
24. What is the volt-ampere rating of a three-phase 208 V, 30 A circuit? 8646 VA (24x208x1.732)
25. What does Rule 4-006 state? Conductor amperage rating may be lower based on the equipment temperature rating. If equipment is rated at 75 degrees C the amperage rating of 90 degree conductors is reduced to that of 75 degree conductors