

Electrical IP Red Seal Practice Exam

1. What size 2 pole breaker must you use on a 3HP, 115V single phase motor?
 - A. 40A
 - B. 50A
 - C. 80A.
 - D. 100A.
2. An electrical equipment approved for use in hazardous location is marked with temperature code of T2C. What is the maximum surface temperature it can withstand?
 - A. 100°C
 - B. 160°C
 - C. 230°C
 - D. 260°C
3. What must be the marking on an approved emergency lighting installed in a dwelling unit?
 - A. IEEE
 - B. UL
 - C. CSA.
 - D. NEMA.
4. What must be the current rating of a thermostat rated to operate at the line voltage?
 - A. 100% of the sum of current ratings of all the equipments it controls.
 - B. 125% of the sum of current ratings of all the equipments it controls.
 - C. 200% of the sum of current ratings of all the equipments it controls.
 - D. 300% of the sum of current ratings of all the equipments it controls.
5. In a commercial garage, entire area up to and including _____ mm above floor is considered as class 1 zone 2 location.
 - A. 25mm
 - B. 50mm
 - C. 100mm
 - D. 150mm
6. What is the maximum amperage of a teck 90 cable installed in a box?
 - A. 100A
 - B. 125A
 - C. 150A
 - D. 200A
7. What PPE (personal protection equipment) is not required when using a hand saw?
 - A. Safety glasses.
 - B. Gloves.
 - C. Steel toed boots.
 - D. Coveralls.
8. If line voltage is 4KV, in a star connected transformer, what is the phase voltage?
 - A. 8.0 KV.
 - B. 6.93 KV.
 - C. 4.0 KV.
 - D. 2.3KV.

9. At what location, caution tape and pylons can be used?

- A. Elevators.
- B. Stairwells.
- C. Windows.
- D. Open trenches

10. Which motor has best starting torque?

- A. Squirrel cage induction motor.
- B. Series connected motor.
- C. Wound rotor motor.
- D. Split phase capacitor start motor.

11. Who should an electrician contact in an event of conflict between electrical and plumbing drawings?

- A. Your supervisor
- B. The Electrical Inspector.
- C. The architect
- D. The General contractor.

12. Nurse call station is characterized as:

- A. Class 1 circuit
- B. Class 2 circuit
- C. Open circuit
- D. Closed circuit

13. An electrician cannot install a telephone jack in which of the following locations?

- A. In a bathroom
- B. In the kitchen.
- C. In the living room
- D. In the bedroom

14. What is the minimum headroom clearance required at a location where consumer service box needs to be installed?

- A. 1 meter.
- B. 1.5 meters.
- C. 2 meters.
- D. 2.5 meters.

15. What is the minimum space required between dry type open ventilated transformer mounted on a concrete wall?

- A. 6 mm.
- B. 12mm.
- C. 24mm.
- D. 32mm.

16. What type of circuit conductors are permitted to be installed in the same raceway carrying conductive fibre optic cable?

- A. Class 2 circuit conductors
- B. Class 1 circuit conductors
- C. Low voltage circuit conductors
- D. High voltage circuit conductors

17. What is the minimum separation between communication conductors with a non-conducting jacket and a pool?
- A. 0.75m
 - B. 1 m
 - C. 1.5m
 - D. 2m
18. How many more #14AWG conductors can be installed in a device box, 3" x 2" x 3" that uses 8 wire connectors?
- A. 5
 - B. 6
 - C. 7
 - D. 8
19. If you had 3 transformers hooked up in delta connection rated at 300 KVA for the whole assembly and one transformer was taken out. What would be the KVA or the remainder?
- A. 100 kva
 - B. 173 kva
 - C. 200 kva
 - D. 300 kva
20. What is the multiplication factor used while calculating conductor size for supplying a capacitor?
- A. 100%
 - B. 125%
 - C. 135%
 - D. 150%
21. When used in class 2 circuits, what is the minimum size of extra low voltage conductor that can be laid in a raceway?
- A. #16AWG.
 - B. #19 AWG.
 - C. #22 AWG.
 - D. #24 AWG.
22. FCC cable cannot be installed in which of the following locations?
- A. under carpet square not exceeding 750mm
 - B. in dry location
 - C. on hard smooth continuous surface made of concrete
 - D. in dwelling units
23. What percentage fill (%) is used to install power conductors used in auxiliary gutters?
- A. 100%.
 - B. 75%.
 - C. 40%.
 - D. 20%.
24. Where would the MSDS sheet be placed if a new container shows up on site?
- A. Attach the sheet to new container.
 - B. Place sheet in MSDS book.
 - C. Supervisor's desk.
 - D. Manager's office

25. What type of test is performed to test the insulation of conductors?

- A. Hipot.
- B. Voltmeter.
- C. Ammeter.
- D. Wattmeter.

26. Where the records would be kept on a GFCI inspection in a building?

- A. Attach record to GFCI.
- B. Electrical maintenance log.
- C. Security desk log book.
- D. Maintenance log book.

27. How are exit lights switched?

- A. A manual switch.
- B. An emergency pull station.
- C. Automatically on failure of emergency power supply.
- D. Automatic transfer switch that energizes on failure of normal power source.

28. What type of enclosure is required in a location where occasional temporary submersion is necessary?

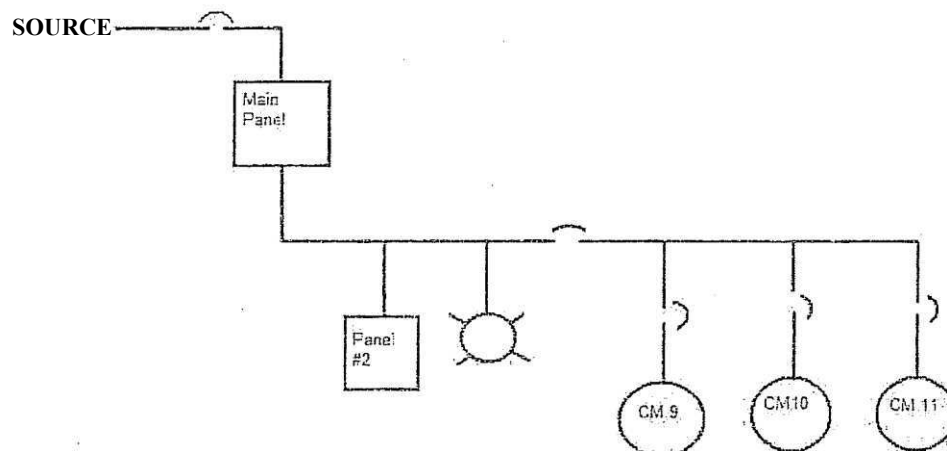
- A. Type 1
- B. Type 2
- C. Type 5
- D. Type 6P

29. Where must a switch be mounted in a finished basement that has no other exit?

- A. Top of the stairs.
- B. Bottom of stairs.
- C. Entrance to basement.
- D. In utility room next to electrical panel.

30. In figure below, how many circuit breakers protect equipment from source to motor CM 10?

- A. 1
- B. 2
- C. 3
- D. 4



31. If a 3-phase motor is rotating in the wrong direction how would an electrician fix it?

- A. interchange black and green conductors
- B. interchange red and black conductors
- C. interchange red and white conductors
- D. interchange blue and white conductors

32. When would you install the receptacle cover plates in a dwelling unit?
- A. After installation of baseboard
 - B. After final coat of paint
 - C. Before installation of baseboard
 - D. After inspection
33. What is the expansion that will happen of a RPVC conduit that is 30m long and is installed in an area where temperature change will be from -45°C to $+35^{\circ}\text{C}$?
- A. 110.3mm.
 - B. 124.8mm
 - C. 221.3 mm.
 - D. 353.4mm.
34. What must be done with a battery in an emergency supply system?
- A. Keep maintained and fully charged.
 - B. Be maintained at not less than 75% of full charge.
 - C. Be maintained at 50% of full charge.
 - D. No need to keep fully charged all the time.
35. What must be done when EMT is run through a fire wall?
- A. Must be grounded on both sides.
 - B. Must slope upwards into room with most hazards.
 - C. Must be smoke proof.
 - D. Must be sealed.
36. If an electrician replaces a NEMA starter with an IEC starter, what type of time delay fuse would he use?
- A. Type D.
 - B. Type P
 - C. Type J
 - D. Type R
37. What must be done when communication cables are run through a wall that is rated for fire protection?
- A. Shall be installed in rigid steel or aluminum conduit.
 - B. Shall be properly closed or sealed in accordance with National Building Code.
 - C. Shall not be run through firewalls.
 - D. Must be sloped upwards into the room requiring fire protection.
38. What size of conductor is needed to supply a 10A load placed 7.1m away and source voltage is 6V? The voltage drop allowed in this installation is 5%.
- A. #8 AWG.
 - B. #10 AWG.
 - C. #12 AWG.
 - D. #14 AWG.
39. What can't you use when mounting a control panel on concrete?
- A. Concrete nails.
 - B. Concrete screws
 - C. Wooden plug and screws
 - D. Steel bolts

40. In summer, what does a condenser do in air condition mode?

- A. Controls the expansion of the refrigerant.
- B. Exposes the cool refrigerant to the air in the heat exchanger.
- C. Compresses the refrigerant.
- D. Cools the hot compressed refrigerant vapor.

41. New magnetic overload keeps tripping how do you fix the problem?

- A. Replace with lower value overloads.
- B. Replace with higher value overloads.
- C. Adjust new overloads settings.
- D. Run without overloads.

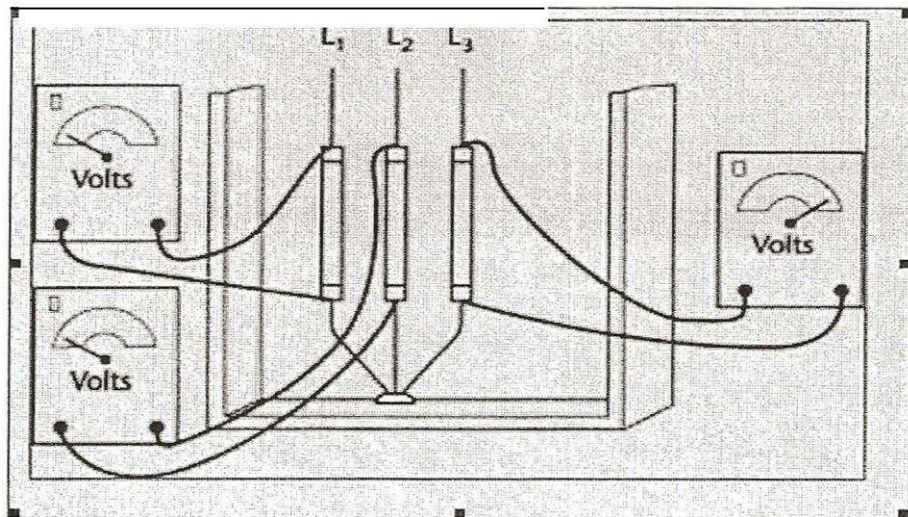
42. How is a low voltage thermostat wired with a hot air furnace?

- A. In series with coil.
- B. In parallel to the coil.
- C. In parallel to the gas valve.
- D. In series with fan.

43. When bonding ground rods using CAD welding what is the last material on top?

- A. Bonding cable.
- B. Welding mold.
- C. The ignition compound.
- D. Welding compound.

44. Diagram below, three fuses protect a star connected motor. Line to line voltage is 480 volts, if fuse #3 blows what will the reading be of meter on line #3?



- A. 0 volts
- B. 277 volts.
- C. 480 volts
- D. 825 volts

45. What are the minimum cover requirements for a NMSC installed under a driveway of a dwelling unit when circuit voltage is 600V?

- A. 150mm
- B. 450mm
- C. 600mm
- D. 900mm

PRACTICE EXAM 3 - ANSWERS

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|-------|--|-------|--|
| 1. C | T45→34AxT29→34x2.5→85→T13→80A | 30. C | |
| 2. C | Rule 18-052-(2)(b) | 31. B | |
| 3. C | Trade knowledge | 32. B | |
| 4. A | Rule 62-120(1) | 33. B | $\Delta L = L_R \times \alpha \times \Delta t = 130 \times 0.052 \times 80 = 124.8 \text{ mm}$ |
| 5. B | Rule 20-102(1) | 34. A | Rule 46-104b |
| 6. D | Rule 12-3022(7), 4-010(3) | 35. D | Rule 2-128 |
| 7. D | | 36. A | Rule 14-200(2) |
| 8. D | $4 \text{ KV} / \sqrt{3} = 2.3 \text{ KV}$ | 37. B | Rule 60-310 and 2-132 |
| 9. D | | 38. A | Table D4 |
| 10. B | | 39. C | |
| 11. A | | 40. D | |
| 12. B | Rule 16-000 1(b) | 41. C | |
| 13. A | Rule 60-400(2) | 42. A | |
| 14. C | Rule 6-206(1)(c)(iv) | 43. C | |
| 15. A | Rule 26-248 (3)(A) | 44. B | |
| 16. A | Rule 56-202(1) | 45. D | Rule 12-012, Table 53 |
| 17. B | Rule 68-056, T61 | | |
| 18. B | Rule 12-3034, T23 | | |
| 19. B | $300 / \sqrt{3} = 173 \text{ KVA}$ | | |
| 20. C | Rule 26-208 (1) | | |
| 21. B | Rule 16-210-(4)(b) | | |
| 22. D | Rule 12-804, 12-806(c) | | |
| 23. D | Rule 12-1904 (1) | | |
| 24. B | Trade knowledge | | |
| 25. A | | | |
| 26. B | | | |
| 27. D | | | |
| 28. D | Rule 2-400(1), Table 65 | | |
| 29. A | | | |