

Electrical Industrial IP Red Seal Practice Exam

1. What does a dashed line between 2 disconnects indicate on a schematic diagram?
 - a. Mechanical interlock
 - b. Bonding conductor
 - c. Ground connection
 - d. Lighting arrestor
2. A shop has 6 rows of lighting each with 42 fixtures. During a lighting retrofit it takes 2 electricians 70 minutes to change 1 fixture. How many electricians are required to change all of the fixtures in a 40 hour time period?
 - a. 3
 - b. 8
 - c. 13
 - d. 15
3. What is the procedure for testing high pressure sodium (HPS) lamp socket for power?
 - a. Use digital VOM to check from centre contact to ground
 - b. Use digital VOM to check from shell to centre contact
 - c. Use analog VOM to check from centre contact to ground
 - d. Use analog VOM to check from shell to centre contact.
4. In addition to wearing safety boots, which combination of personal protective equipment should be utilized when working at a switching substation?
 - a. Work gloves, anti-glare safety goggles and glow stick
 - b. Work gloves, face shield and ear lugs
 - c. Safety gloves, faces shield and glow stick
 - d. Safety gloves, safety goggles and ear plugs
5. A three-phase delta connected load is single-phasing because of an open winding. What percentage of its original load could be delivered?
 - a. 0.333
 - b. 0.5
 - c. 0.667
 - d. 0.723
6. A bank of 6 batteries is arranged in 2 parallel banks of 3 batteries in series. Each battery is rated at 6V and 40 ampere-hours. When the batteries are fully charged what will be the output voltage?
 - a. 3V
 - b. 6V
 - c. 12V
 - d. 18V
7. A battery consisting of 9-lead acid cells is arranged in 3 parallel banks of 3. Each cell is rated at 2V and 20Ah. What is the total ampere-hour rating of the battery?
 - a. 20Ah
 - b. 60Ah
 - c. 120Ah
 - d. 180Ah

8. What do the letters “HRC” on a fuse indicate?
 - a. High running current
 - b. High running capacity
 - c. Half rupture current
 - d. High rupture capacity

9. What is the minimum size of RW90 copper conductors required at feed a 230V, 5hp, single-phase motor located 60m from the distributor centre, without exceeding 3% voltage drop?
 - a. No.4 AWG
 - b. No.6 AWG
 - c. No.8 AWG
 - d. No.10 AWG

10. What will be the result if the contacts of the centrifugal switch in a single-phase motor do not close due to malfunctions or an accumulation of dirt?
 - a. No voltage will be supplied to any of the starter windings
 - b. The motor will not reach full rated speed
 - c. The starting winding will burn out in a very short time
 - d. The running winding will be energized but the motor will not start.

11. While working in the motor control centre (MCC) of a plant, the 600V magnetic starter for a 40hp motor is humming louder than the adjacent starters. Which component requires repairing?
 - a. Shading coil
 - b. Overloads
 - c. Main contacts
 - d. Contactor coil

12. The wiring to a remote potentiometer for a variable frequency drive (VFD) has been diagnosed as being affected by electromagnetic interference. Which cable is used to replace the existing wiring?
 - a. No.19 AWG copper twisted pair cable
 - b. Category 5E, FT6, 4 air cable
 - c. No.14 AWG 75 ohm, RG 6 coaxial cable
 - d. No.16 AWG shielded triad cable.

13. What component of an off-line UPS prevents AC voltage spikes from reaching the load?
 - a. Rectifier
 - b. Lead acid batteries
 - c. Inverter
 - d. Surge suppressor

14. A -10V to +10V temperature transmitter is calibrated to measure from -50EC to +300EC. At a temperature of +76EC, what would be the expected voltage output from the transmitter?
 - a. -3.6V
 - b. -2.8V
 - c. +2.5V
 - d. +4.3V

15. How can failure of a function key on a DCS interface unit due to excessive use be temporarily corrected?
 - a. By reprogramming to another function key
 - b. By reprogramming to another output device
 - c. By rebooting the system
 - d. By cleaning the unit with solvent

16. When checking with an ohmmeter, a capacitor reads 0. What is the capacitor's condition?
- Open-circuited
 - Short-circuited
 - Grounded
 - Serviceable
17. When the input to a 0-10V, six digit, Digital to Analog (D/A) converter changes from (binary) 100110 to 100111 how much has the output voltage changed?
- 0.0159V
 - 0.159V
 - 0.3V
 - 1.6V
18. During the operating cycle of an electric central warm air furnace, in what order are the contacts controlling the blower motor arranged to operate, in relation to those of the heating elements?
- Close first and open first
 - Close first and open last
 - Close last and open first
 - Close last and open last
19. Which precaution should be taken first when working on an ionized dust-collection system?
- Clean the system
 - De-ionize the system
 - De-energize the system
 - Install grounding jumpers
20. What type of signal does a pressure transmitter output in an environmental regulating system?
- 0 to 5V AC
 - 0 to 5V DC
 - 4 to 20mA AC
 - 4 to 20mA DC

ANSWER KEY

1. A
2. D
3. D
4. D
5. C
6. C
7. B
8. B
9. B
10. B
11. A
12. D
13. A
14. B
15. A
16. B
17. B
18. B
19. C
20. D