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ROLL NUMBER

WRITTEN TEST FOR THE POST OF TECHNCIAN (ELECTRICAL) – A To B

DATE: 19/03/2024 **TIME: 9.30 to 10.30 AM**

DURATION: 60 MINUTES **Total Marks: 50**

INSTRUCTIONS TO THE CANDIDATES

1. Write your Roll Number on the top of the Question Booklet and in the answer sheet.
2. Each question carries 1 mark.
3. There will not be any Negative Marking.
4. **Write legibly the alphabet of the most appropriate answer (A, B, C or D) in the separate answer sheet provided.**
5. Over-writing is not permitted.
6. Candidate should sign in the question paper and answer sheet.
7. No clarifications will be given.
8. Candidate should hand over the answer sheet to the invigilator before leaving the examination hall.

Signature of the Candidate

19/3/24

MFCP I - TECHNICIAN (ELECTRICAL)

1. The SI unit of electrical power is:
a. Joule
b. Ampere
c. Volt
d. Watt

2. What is the primary function of a transformer?
a. Change AC to DC
b. Change DC to AC
c. Change voltage levels
d. Limit current

3. Which colour of wire is generally used for earthing/grounding?
a. Red
b. Black
c. Green
d. Blue

4. An electrical fuse protects against:
a. Overcurrent
b. Undervoltage
c. Power factor
d. Frequency changes

5. In a 3-phase AC system, the phase difference between any two phases is:
a. 90 degrees
b. 120 degrees
c. 180 degrees
d. 360 degrees

6. Which instrument is used to measure insulation resistance?
a. Multimeter
b. Megohmmeter (Megger)
c. Voltmeter
d. Ammeter

7. What is the typical voltage level in a residential electrical system in India?
a. 110V
b. 230V
c. 415V
d. 11kV

8. The color code for a 2.2 kΩ resistor is:
a. Red-Red-Red-Gold
b. Brown-Red-Red-Gold
c. Red-Red-Orange-Gold
d. Orange-Orange-Red-Gold

9. A capacitor in an electrical circuit is used to:
a. Store electrical energy
b. Limit current
c. Increase voltage
d. Generate heat

10. In a DC circuit, the positive terminal of a battery is connected to the:
a. Cathode
b. Anode
c. Insulator
d. Ground

11. What type of motor is commonly used in ceiling fans?
a. DC motor
b. Universal motor
c. Single-phase Induction motor
d. 3-phase induction motor

12. Which of these is an electrical safety device?
a. ELCB (Earth Leakage Circuit Breaker)
b. Capacitor
c. Transformer
d. Connector

13. Kirchhoff's Current Law (KCL) states that:
a. Voltage is the same across all parallel components
b. Total current entering a junction equals total current leaving
c. Resistance is inversely proportional to wire length
d. Power is equal to voltage times current

14. The resistance of a parallel circuit consisting of two branches is 12 ohms. If the resistance of one branch is 18 ohms, what is the resistance of the other?
a. 18 Ω
b. 36 Ω
c. 48 Ω
d. 64 Ω

15. Which is NOT a type of electrical wire?
a. Solid
b. Stranded
c. Insulated
d. Circular

16. Heat in a conductor is produced on the passage of electric current due to
a. Resistance
b. Reactance
c. Capacitance
d. Inductance

17. An LED is an example of a:
a. Resistor
b. Semiconductor device
c. Capacitor
d. Conductor

18. Which of the following is NOT a conductor of electricity?
a. Copper
b. Aluminum
c. Silver
d. Glass

19. The magnetic field around a current-carrying conductor is:
a. Parallel to the conductor
b. Perpendicular to the conductor
c. In the shape of a star
d. Non-existent

20. What does a star-delta starter do?
a. Reduces starting current in a motor
b. Controls speed of a motor
c. Changes AC to DC
d. Protects a motor from overload

21. What is the main difference between a synchronous generator and an asynchronous generator?
a. Synchronous generator has brushes, asynchronous doesn't
b. Synchronous generator produces DC, asynchronous produces AC
c. Synchronous generator has higher efficiency, asynchronous has lower
d. Synchronous generator requires external excitation, asynchronous doesn't

22. Which of the following is NOT a common maintenance task for a power generator?
a. Checking and cleaning air filters
b. Topping up engine oil
c. Measuring voltage output
d. Replacing spark plugs

23. The burden of Current Transformer (CT) is specified in
a. Percentage of load current
b. Volt – Ampere
c. Percentage Ratio error
d. Percentage Phase Error

24. What is the main advantage of using conduit wiring?
a. Easy to install
b. More aesthetically pleasing
c. Provides better protection for wires
d. Lower cost

25. In an AC. circuit, a low value of kVAR compared with kW indicates
a. Unity power factor
b. Low efficiency
c. High power factor
d. Maximum load current

26. What safety precautions should be taken before entering a substation?
a. Inform relevant personnel and obtain a permit.
b. Ensure all equipment is turned off.

c. Wear appropriate PPE (Personal Protective Equipment).
d. All of the above.

27. Power factor of the following circuit will be zero
a. Capacitance
b. Inductance
c. Both (b) and (a)
d. Resistance

28. What is the recommended course of action if you encounter a person suffering from electric shock?
a. Touch the person to break contact
b. Turn off the power source if safe to do so.
c. Apply water to the victim.
d. Move the person without checking for injuries.

29. What is the electrolyte solution in a lead-acid battery made of?
a. Sulfuric acid
b. Sodium hydroxide
c. Distilled water
d. Saltwater

30. What happens to the specific gravity of the electrolyte solution in a lead-acid battery as it discharges?
a. Increases
b. Decreases
c. Remains constant
d. Becomes unpredictable

31. Material used inside the breather to prevent moisture entering the transformer is
a. Sodium chloride
b. Sodium silicate
c. Silica gel
d. Copper sulphate

32. Which of the following is a symptom of a faulty capacitor?
a. Motor overheating
b. Bulging capacitor
c. Reduced power output
d. All of the above

33. How does a transformer work to change voltage levels?
a. By changing the frequency of the AC current.
b. By utilizing the principle of magnetic induction.
c. By storing and releasing electrical energy.
d. By converting AC to DC and vice versa.

34. What is the basic principle behind an electric motor?
a. Interaction between a magnetic field and a current-carrying conductor
b. Chemical reaction that generates electricity.
c. Transfer of heat energy into electrical energy.
d. Storage of electrical energy in a capacitor.

35. An MCB (Miniature Circuit Breaker) primarily protects against:
a. Overvoltage
b. Undervoltage
c. Short circuits
d. Power Surges

36. What type of lighting fixture is commonly used in operating rooms?
a. Incandescent bulbs
b. Fluorescent lights
c. Surgical LED lighting
d. Halogen lights

37. What is the key benefit of LED lighting in hospital environments?
a. Longer lifespan
b. Reduced energy consumption
c. Warmer color temperature
d. Better shock resistance

38. What is the main advantage of using a star connection in a 3-phase system?
a. Higher voltage rating
b. Lower current rating

c. Can provide a neutral point
d. Increased efficiency

39. Which device is used to convert AC to DC?
a. Transformer
b. Rectifier
c. Inverter
d. Capacitor

40. Star-delta starting of motors is not possible in case of
a. low horse power motors
b. Induction motors
c. single phase motors
d. high speed motors

41. The curve representing ohm's law is
a. sine function
b. Linear
e.
c. a parabola
d. a hyperbola

42. The voltage applied across an electric iron is halved. The power consumption of the iron will be:
a. one-half
b. one-fourth
c. $1/\sqrt{2}$times
d. three-fourth

43. Cells are connected in series in order to increase the
a. current capacity
b. life of the cells
c. voltage of cell
d. terminal voltage

44. For testing appliances, the wattage of test lamp should be
a. Very low
b. Low
c. High
d. Any value

45. An electrolytic capacitor is usually used for
a. D.C. only
b. AC. Only
c. both D.C. as well as A.C.
d. None of the above

46. Petroleum jelly is applied to the electrical connections to the lead-acid battery
a. prevent local heating
b. prevent short-circuiting
c. reduce path resistance
d. prevent corrosion

47. Which of the following protects a cable against mechanical injury?
a. Bedding
b. Sheath
c. Armouring
d. None of the above

48. Low tension cables are generally used upto
a. 200 V
b. 500 V
c. 700 V
d. 1000 V

49. If a wire conductor of 0.2 ohm resistance is doubled in length without change in area of cross section, its resistance becomes
a. 0.4 ohm
b. 0.6 ohm
c. 0.8 ohm
d. 1 ohm

50. The ratio of active power to apparent power is known as ..... factor.
a. Demand
b. Load
c. Power
d. Form

	Technician electrical			
	Correct			
1	D	26	D	
2	C	27	C	
3	C	28	B	
4	A	29	A	
5	B	30	B	
6	B	31	C	
7	B	32	D	
8	A	33	B	
9	A	34	A	
10	B	35	C	
11	C	36	C	
12	A	37	B	
13	B	38	C	
14	B	39	B	
15	D	40	C	
16	A	41	B	
17	B	42	B	
18	D	43	D	
19	B	44	C	
20	A	45	A	
21	D	46	D	
22	D	47	C	
23	B	48	D	
24	C	49	A	
25	C	50	C	

Kaur
19/3/24