



SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES & TECHNOLOGY

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ROLL NUMBER

WRITTEN TEST FOR THE POST OF TECHNICIAN (ELECTRICAL) -A

DATE: 12/06/2025

TIME: 10 To 11.30 am

DURATION: 90 MINUTES

Total Marks: 100

INSTRUCTIONS TO THE CANDIDATES

1. Write your Roll Number on the top of the Question Booklet and in the **OMR** sheet.
2. Each question carries **one (1)** mark.
3. There will be no Negative Marking.
4. Each question carries 4 options i.e., **A, B, C & D**. Darken completely, the bubble corresponding to the most appropriate answer using **blue or black ball point pen**.
5. Marking more than one option will invalidate the answer.
6. Candidate should sign in the **question paper** and **OMR** sheet.
7. No clarifications will be given.
8. Candidate should hand over the **OMR** sheet to the invigilator before leaving the examination hall.

Signature of the Candidate

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1. What is the SI unit of electric current?

- A. Volt
- B. Ampere
- C. Ohm
- D. Watt

2. The function of a fuse in an electrical circuit is to:

- A) Increase current
- B) Decrease voltage
- C) Protect from overload
- D) Convert AC to DC

3. Which law states that the current is directly proportional to voltage and inversely proportional to resistance?

- A) Faraday's Law
- B) Ohm's Law
- C) Lenz's Law
- D) Kirchhoff's Law

4. What is the main active material in a lead-acid battery's positive plate?

- A) Zinc
- B) Lead
- C) Lead dioxide
- D) Copper

5. Which of the following is not a fundamental electrical unit?

- A) Volt
- B) Ampere
- C) Ohm
- D) Joule per meter

6. In a parallel circuit, the voltage across each branch is:

- A) Zero
- B) Different
- C) Same
- D) Half

7. A 3-phase induction motor is started using a star-delta starter. This method:

- A) Reduces torque and current during start
- B) Increases voltage during start
- C) Reverses the rotation
- D) Acts as a fuse

8. Which instrument is best suited for measuring high resistance?

- A) Voltmeter
- B) Megger
- C) Ammeter
- D) Multimeter

9. What is the power factor when the circuit is purely resistive?

- A) 0
- B) 0.5
- C) 1
- D) Infinite

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10. Which of the following is used for improving power factor?

- A) Transformer
- B) Induction motor
- C) Capacitor
- D) Generator

11. In hospital electrical systems, which of these is a critical requirement?

- A) High current draw
- B) Isolated power supply
- C) Single-phase wiring only
- D) No earthing

12. Which instrument is based on the heating effect of current?

- A) Voltmeter
- B) Thermocouple Ammeter
- C) Moving coil meter
- D) Multimeter

13. Which type of cable is used for underground wiring?

- A) Flexible wire
- B) VIR
- C) PVC sheathed cable
- D) Teflon wire

14. Illumination is measured in:

- A) Watt
- B) Lux
- C) Ohm
- D) Lumen

15. The maximum load that can be safely carried by a fuse wire depends on its:

- A) Length
- B) Material
- C) Color
- D) Insulation

16. Which of the following is a non-renewable energy source?

- A) Solar
- B) Wind
- C) Hydro
- D) Diesel generator

17. What happens if neutral wire breaks in a single-phase circuit?

- A) Voltage becomes zero
- B) Equipment gets full voltage
- C) It may cause over-voltage
- D) No effect

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18. A transformer's core is laminated to:

- A) Increase weight
- B) Reduce eddy current loss
- C) Increase flux
- D) Increase voltage

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19. What does a voltmeter measure?

- A) Resistance
- B) Current
- C) Voltage
- D) Frequency

20. Star-Delta starter is applicable for motors having:

- A) Less than 1 HP
- B) Less than 5 HP
- C) More than 5 HP
- D) Less than 0.5 HP

21. A Maxwell bridge is used to measure:

- A) Voltage
- B) Current
- C) Inductance
- D) Capacitance

22. A 100 W bulb glows brighter than a 60 W bulb because:

- A) It has more resistance
- B) It draws less current
- C) It consumes more energy
- D) It has higher voltage rating

23. What is the frequency of standard AC supply in India?

- A) 50 Hz
- B) 60 Hz
- C) 100 Hz
- D) 25 Hz

24. The material commonly used for making fuse wires is:

- A) Copper
- B) Lead-tin alloy
- C) Aluminium
- D) Silver

25. Earthing provides a path for:

- A) Over-voltage
- B) Leakage current
- C) Magnetic flux
- D) Voltage drop

26. Which one is a passive component?

- A) Diode
- B) Resistor
- C) Transistor
- D) SCR

27. Among the following which motor is used for energy efficient ceiling fan?

- A) Single phase induction motor
- B) 3 phase induction motor
- C) BLDC motor
- D) Series motor

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28. A capacitor stores:

- A) Magnetic energy
- B) Electrical energy
- C) Kinetic energy
- D) Thermal energy

29. Which device is used to convert AC to DC?

- A) Transformer
- B) Motor
- C) Inverter
- D) Rectifier

30. Which method is used to control speed in a DC shunt motor?

- A) Voltage control
- B) Field control
- C) Rotor resistance
- D) Commutation

31. The unit of magnetic flux density is:

- A) Weber
- B) Tesla
- C) Henry
- D) Ampere-turn

32. In an AC circuit, power factor is defined as the:

- A) Ratio of kW to kVA
- B) Ratio of kVA to kW
- C) Product of voltage and current
- D) Ratio of current to resistance

33. What happens if the frequency of supply is increased in an induction motor?

- A) Speed decreases
- B) Speed increases
- C) Power increases
- D) Power decreases

34. The capacitor start motor is used in:

- A) Fans
- B) Lathe
- C) Pumps
- D) Mixers

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35. Which of these is used for the protection of appliances from high current?

- A) MCB
- B) MCCB
- C) Contactor
- D) Starter

36. Which of the following is a type of single-phase induction motor?

- A) Slip ring
- B) Synchronous
- C) Split phase
- D) Stepper

37. The instrument used to measure power in a circuit is called:

- A) Voltmeter

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- B) Wattmeter
- C) Ammeter
- D) Energy meter

38. What happens in a short circuit?

- A) Voltage drops
- B) High resistance appears
- C) High current flows
- D) Circuit becomes open

39. A 3 Ω resistor having 2 A current will dissipate the power of

- A) 6 Watts
- B) 12 Watts
- C) 5 Watts
- D) 20 Watts

40. The fuse rating is always expressed in:

- A) Volts
- B) Ohms
- C) Amperes
- D) Watts

41. What does IP in electrical equipment stand for (e.g., IP65)?

- A) Internal Power
- B) Insulation Protection
- C) Ingress Protection
- D) Integrated Power

42. The purpose of a choke in a tube light is to:

- A) Provide brightness
- B) Reduce voltage
- C) Limit current
- D) Increase resistance

43. What is the role of a relay in an electrical circuit?

- A) Increase voltage
- B) Provide delay
- C) Detect faults and switch circuits
- D) Convert AC to DC

44. Which material is preferred for electrical contacts?

- A) Iron
- B) Silver
- C) Copper
- D) Aluminium

45. A capacitor blocks:

- A) DC
- B) AC
- C) Both AC and DC
- D) None

46. The secondary of a current transformer (CT) should never be:

- A) Open circuited
- B) Short circuited

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- C) Grounded
- D) Fused

47. What is the purpose of a Neutral wire?

- A) To increase power
- B) To complete the circuit
- C) To carry overload
- D) To earth the system

48. In a 3 phase distribution system, which conductor carries current under normal operation?

- A) Neutral
- B) Ground
- C) Phase
- D) Lightning conductor

49. Soldering is done using:

- A) Steel and tin
- B) Aluminium and copper
- C) Lead and tin
- D) Brass and zinc

50. A thermal overload relay protects against:

- A) High voltage
- B) Overcurrent due to overload
- C) Earth fault
- D) Short circuit

51. The color code for earth wire in modern wiring is:

- A) Black
- B) Red
- C) Green
- D) Blue

52. The instrument used to measure energy consumed is:

- A) Wattmeter
- B) Energy meter
- C) Multimeter
- D) Oscilloscope

53. Which test checks the continuity of a wire?

- A) Open test
- B) Short test
- C) Megger test
- D) Continuity test

54. Fluorescent lamps operate on:

- A) Heating principle
- B) Magnetic field
- C) Ionization of gas
- D) Optical feedback

55. A 2 HP motor draws approximately how much current on 230V supply?

- A) 4A
- B) 6A

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- C) 10A
D) 15A

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56. Which of the following is used in UPS systems to store charge?

- A) Inductor
- B) Battery
- C) Capacitor
- D) Rectifier

57. Transformer oil is used for:

- A) Conduction
- B) Cooling and insulation
- C) Power factor correction
- D) Voltage transformation

58. A GFCI (Ground Fault Circuit Interrupter) is used to protect against:

- A) Short circuit
- B) Overload
- C) Earth leakage
- D) Voltage drop

59. Double insulation is provided in appliances for:

- A) Better performance
- B) Increased current
- C) Extra safety
- D) High speed

60. The synchronous speed of a 4-pole motor operating at 50 Hz is:

- A) 750 RPM
- B) 1000 RPM
- C) 1500 RPM
- D) 3000 RPM

61. In an RLC circuit at resonance, the impedance is:

- A) Maximum
- B) Minimum
- C) Zero
- D) Infinite

62. Which among the following is used as a protection device in distribution boards?

- A) Transformer
- B) Contactor
- C) MCB
- D) Resistor

63. The efficiency of a transformer is usually more than:

- A) 40%
- B) 60%
- C) 80%
- D) 95%

64. The electric shock is caused by the flow of:

- A) Voltage
- B) Power
- C) Resistance
- D) Current

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65. Which type of fire extinguisher is suitable for electrical fires?

- A) Water
- B) Foam
- C) CO₂
- D) Sand

66. Henry is used to measure:

- A) Resistance
- B) Brightness
- C) Inductance
- D) Capacitance

67. Which device converts energy in one form to another?

- A) Inverter
- B) UPS
- C) Transducer
- D) Oscillator

68. Electrical conductivity is highest in:

- A) Iron
- B) Aluminium
- C) Gold
- D) Silver

69. Which of these is not a part of a DC generator?

- A) Commutator
- B) Armature
- C) Slip ring
- D) Field winding

70. Which component stores electrical energy?

- A) Resistor
- B) Capacitor
- C) Diode
- D) Transistor

71. What is the unit of magnetic flux?

- A) Henry
- B) Farad
- C) Tesla
- D) Weber

72. In electric motors, slip refers to the difference between:

- A) Rotor and stator frequency
- B) Synchronous speed and rotor speed
- C) Voltage and current
- D) Resistance and inductance

73. Earthing is done to protect from:

- A) Overload
- B) Electric shock
- C) Voltage drop
- D) Short circuit

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74. Power factor of a purely resistive circuit is:

- A) 0
- B) 1
- C) 0.5
- D) 0.707

75. What is the function of an alternator?

- A) To convert mechanical energy to electrical energy
- B) To store electrical energy
- C) To convert AC to DC
- D) To convert electrical energy to mechanical energy

76. With rise in temperature the resistance of pure metals

- A) Decreases
- B) First increases and then decreases
- C) Remains constant
- D) Increases

77. Which of the following is not an insulating material?

- A) PVC
- B) Bakelite
- C) Mica
- D) Copper

78. The earth wire in a domestic supply is connected to:

- A) Phase
- B) Neutral
- C) Outer metal body of appliance
- D) Live wire

79. A voltmeter is always connected:

- A) In series with the circuit
- B) In parallel with the circuit
- C) Across a resistor
- D) In series with the load

80. Which type of current is used in homes?

- A) Direct current
- B) Alternating current
- C) Pulsating current
- D) Constant current

81. The device used to measure insulation resistance is:

- A) Megger
- B) Multimeter
- C) Ammeter
- D) Voltmeter

82. Which of the following is a semiconductor material?

- A) Copper
- B) Silicon
- C) Silver
- D) Iron

83. What is the color code for the earth wire in electrical wiring?

- A) Red
- B) Black
- C) Green or Green-yellow
- D) Blue

84. Which type of motor is commonly used in ceiling fans?

- A) Synchronous motor
- B) DC motor
- C) Single-phase induction motor
- D) Stepper motor

85. What is the function of a contactor?

- A) To increase resistance
- B) To make or break connection in a circuit
- C) To reduce current
- D) To amplify voltage

86. Which of these measures reactive power?

- A) Wattmeter
- B) Voltmeter
- C) Ammeter
- D) VAR meter

87. The SI unit of capacitance is:

- A) Henry
- B) Tesla
- C) Ohm
- D) Farad

88. A light bulb draws 300 mA when the voltage across it is 240 V. The resistance of the light bulb is

- A) 600 Ω
- B) 800 Ω
- C) 400 Ω
- D) 1000 Ω

89. What does a diode allow?

- A) Current in both directions
- B) Only voltage flow
- C) Current in one direction only
- D) No current flow

90. An ideal voltage source should have

- A) zero source resistance
- B) small value of e.m.f.
- C) large value of e.m.f.
- D) infinite source resistance

91. The relay used for overload protection in motors is called:

- A) Earth leakage relay
- B) Thermal overload relay
- C) Static relay
- D) Differential relay

92. Which of the following is used to maintain voltage stability in power systems?

- A) Circuit breaker
- B) Relay
- C) Capacitor bank
- D) Transformer

93. Which part of the induction motor carries current but does not rotate?

- A) Rotor
- B) Shaft
- C) Stator
- D) Commutator

94. Which is used to store electric charge temporarily?

- A) Inductor
- B) Transformer
- C) Capacitor
- D) Fuse

95. What is the role of neutral wire in electrical circuits?

- A) To break the circuit
- B) To complete the circuit
- C) To carry overload
- D) To increase current

96. What is the role of slip rings in an AC generator?

- A) Convert AC to DC
- B) Convert DC to AC
- C) Transfer current to external circuit
- D) Act as resistor

97. Star-delta starting of motors is not possible in case of

- A) Variable speed motors
- B) Single phase motors
- C) Low horse power motors
- D) Low horse power motors

98. A double pole switch is used to:

- A) Connect only the phase
- B) Connect both phase and neutral
- C) Increase current
- D) Connect earth wire

99. In electrical maintenance, the first step is always:

- A) Check continuity
- B) Switch on the power
- C) Isolate the power supply
- D) Replace the fuse

100. Earthing in a building should have a resistance value of less than:

- A) 25 ohms
- B) 15 ohms
- C) 10 ohms
- D) 5 ohms

Answer Key
Technician Electrical

1	B	26	B	51	C	76	D
2	C	27	C	52	B	77	D
3	B	28	B	53	D	78	C
4	C	29	D	54	C	79	B
5	D	30	B	* 55	C	80	B
6	C	31	B	56	B	81	A
7	A	32	A	57	B	82	B
8	B	33	B	58	C	83	C
9	C	* 34	D	59	C	84	C
10	C	35	A	60	C	85	B
11	B	36	C	61	B	86	D
12	B	37	B	62	C	87	D
13	C	38	C	63	D	88	B
14	B	39	B	64	D	89	C
15	B	40	C	65	C	90	A
16	D	41	C	66	C	91	B
* 17	C	42	C	67	C	92	C
18	B	43	C	68	D	93	C
19	C	44	B	69	C	94	C
20	C	45	A	70	B	95	B
21	C	46	A	71	D	96	C
22	C	47	B	72	B	97	B
23	A	48	C	73	B	98	B
24	B	49	C	74	B	99	C
25	B	50	B	75	A	100	D

* Question nos. 17, 34, 55 deleted

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