

GOVERNMENT OF MIZORAM
POWER & ELECTRICITY DEPARTMENT

**COMBINED COMPETITIVE EXAMINATION FOR
RECRUITMENT TO DIFFERENT TECHNICAL POSTS
(AUGUST-2026)**

**PAPER-III
(ELECTRONICS)**

Full Marks : 200
Time Allowed : 3 Hours

Signature of Invigilator _____

CODE :

(For official use)

SUBJECT	MARK CARRIED BY EACH QUESTION / TOPIC	NO. OF CORRECT ANSWERS	MARKS OBTAINED
Electronics	2		
TOTAL			

Signature of Examiner : _____

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All questions carry 2 marks.

Put a tick (✓) mark against the correct answer in the space given in each question.

If a candidate gives more than one answer to one question, it will be treated as wrong answer even if one of the given answers happens to be correct.

ELECTRONICS - 200 MARKS

1. The unit of electric current is:

- (a) Volt ()
- (b) Ohm ()
- (c) **Ampere** ()
- (d) Watt ()

2. Potential difference is measured in:

- (a) Ampere ()
- (b) **Volt** ()
- (c) Ohm ()
- (d) Coulomb ()

3. The opposition offered by a conductor to current flow is called:

- (a) Voltage ()
- (b) **Resistance** ()
- (c) Power ()
- (d) Frequency ()

4. Which current changes its direction periodically?

- (a) DC ()
- (b) **AC** ()
- (c) Static current ()
- (d) Pulsating current ()

5. The frequency of AC supply in India is:

- (a) 25 Hz ()
- (b) 40 Hz ()
- (c) **50 Hz** ()
- (d) 60 Hz ()

6. Domestic supply in India is generally:

- (a) **Single phase** ()
- (b) Two phase ()
- (c) Three phase only ()
- (d) Six phase ()

7. Three-phase supply has phase displacement of:

- (a) 60° ()
- (b) 90° ()
- (c) **120°** ()
- (d) 180° ()

8. Which cable is commonly used for house wiring?
- (a) **PVC insulated cable** ()
 - (b) Bare conductor ()
 - (c) GI wire ()
 - (d) Nichrome wire ()
9. The conductor most commonly used in electrical cables is:
- (a) Iron ()
 - (b) **Copper** ()
 - (c) Zinc ()
 - (d) Lead ()
10. The insulation of a cable is used to:
- (a) Increase current ()
 - (b) Reduce voltage ()
 - (c) **Prevent leakage current** ()
 - (d) Increase resistance ()
11. A dry cell is an example of:
- (a) Secondary cell ()
 - (b) **Primary cell** ()
 - (c) Fuel cell ()
 - (d) Solar cell ()
12. A lead-acid battery is a:
- (a) Primary cell ()
 - (b) **Secondary cell** ()
 - (c) Dry cell ()
 - (d) Fuel cell ()
13. The nominal voltage of a dry cell is:
- (a) **1.5 V** ()
 - (b) 2 V ()
 - (c) 6 V ()
 - (d) 12 V ()
14. In a lead-acid battery, the electrolyte used is:
- (a) Distilled water ()
 - (b) Hydrochloric acid ()
 - (c) **Sulphuric acid** ()
 - (d) Nitric acid ()
15. Connecting batteries in series increases:
- (a) Current capacity only ()
 - (b) **Voltage** ()
 - (c) Power factor ()
 - (d) Frequency ()

16. Connecting batteries in parallel increases:

- (a) Voltage ()
- (b) Frequency ()
- (c) **Current capacity (Ah)** ()
- (d) Resistance ()

17. The positive plate of a lead-acid battery is made of:

- (a) **Lead peroxide** ()
- (b) Sponge lead ()
- (c) Copper ()
- (d) Carbon ()

18. Rechargeable batteries are called:

- (a) Primary cells ()
- (b) **Secondary cells** ()
- (c) Dry cells ()
- (d) Solar cells ()

19. Which battery is commonly used in automobiles?

- (a) Dry cell ()
- (b) **Lead-acid battery** ()
- (c) Mercury cell ()
- (d) Carbon-zinc cell ()

20. Battery capacity is measured in:

- (a) **Ampere-hour** ()
- (b) Watt ()
- (c) Volt ()
- (d) Ohm ()

21. An ammeter is connected:

- (a) In parallel ()
- (b) **In series** ()
- (c) Across supply ()
- (d) Across resistor only ()

22. A voltmeter is connected:

- (a) In series ()
- (b) **In parallel** ()
- (c) In earth wire ()
- (d) In neutral wire only ()

23. The resistance of an ideal ammeter is:

- (a) Very high ()
- (b) Infinite ()
- (c) **Zero** ()
- (d) Medium ()

24. The resistance of an ideal voltmeter is:
- (a) Zero ()
 - (b) Very low ()
 - (c) Medium ()
 - (d) Infinite** ()
25. Which instrument can measure voltage, current and resistance?
- (a) Megger ()
 - (b) Wattmeter ()
 - (c) Multimeter** ()
 - (d) Energy meter ()
26. The instrument used to measure insulation resistance is:
- (a) Ammeter ()
 - (b) Megger** ()
 - (c) Voltmeter ()
 - (d) CRO ()
27. Moving coil instruments are mainly used for:
- (a) AC only ()
 - (b) DC only** ()
 - (c) Both AC and DC directly ()
 - (d) High voltage only ()
28. Electrical measuring instruments are used to:
- (a) Generate power ()
 - (b) Measure electrical quantities** ()
 - (c) Store energy ()
 - (d) Increase voltage ()
29. Before measuring resistance with a multimeter, the supply should be:
- (a) Increased ()
 - (b) Switched OFF** ()
 - (c) Switched ON ()
 - (d) Doubled ()
30. The unit of resistance is:
- (a) Volt ()
 - (b) Ampere ()
 - (c) Watt ()
 - (d) Ohm** ()
31. The most commonly used soldering iron for electronics work is:
- (a) 15–60 W** ()
 - (b) 500 W ()
 - (c) 1000 W ()
 - (d) 2000 W ()

32. Flux is used during soldering to:
- (a) Increase resistance ()
 - (b) Remove oxide layer** ()
 - (c) Cool the joint ()
 - (d) Increase voltage ()
33. Which material is commonly used as solder?
- (a) Copper and Iron ()
 - (b) Tin and Lead alloy** ()
 - (c) Zinc and Aluminium ()
 - (d) Iron and Nickel ()
34. A good solder joint appears:
- (a) Dull and rough ()
 - (b) Shiny and smooth** ()
 - (c) Black and burnt ()
 - (d) Cracked ()
35. Which switch remains ON only while pressed?
- (a) Toggle switch ()
 - (b) Rotary switch ()
 - (c) Push-button switch** ()
 - (d) Knife switch ()
36. SPST stands for:
- (a) Single Pole Single Throw** ()
 - (b) Single Pole Series Throw ()
 - (c) Series Pole Single Throw ()
 - (d) Single Phase Single Throw ()
37. The temperature of a soldering iron should be:
- (a) Too low ()
 - (b) Too high ()
 - (c) Suitable for melting solder** ()
 - (d) Equal to room temperature ()
38. Which tip is commonly used for general electronic soldering?
- (a) Chisel tip** ()
 - (b) Hammer tip ()
 - (c) Flat plate ()
 - (d) Round rod ()
39. A switch is used to:
- (a) Increase voltage ()
 - (b) Open or close a circuit** ()
 - (c) Store energy ()
 - (d) Measure current ()

40. Excessive heating during soldering may:

- (a) Improve components ()
- (b) **Damage components** ()
- (c) Increase efficiency ()
- (d) Increase frequency ()

41. Ohm's Law is:

- (a) **$V = IR$** ()
- (b) $P = VI$ ()
- (c) $I = V^2R$ ()
- (d) $R = VI$ ()

42. According to Kirchhoff's Current Law:

- (a) **Sum of currents entering a junction equals sum leaving it** ()
- (b) Voltage is constant ()
- (c) Power is conserved ()
- (d) Resistance is constant ()

43. Two $10\ \Omega$ resistors connected in series have equivalent resistance:

- (a) $5\ \Omega$ ()
- (b) $10\ \Omega$ ()
- (c) **$20\ \Omega$** ()
- (d) $100\ \Omega$ ()

44. Two $10\ \Omega$ resistors connected in parallel have equivalent resistance:

- (a) **$5\ \Omega$** ()
- (b) $10\ \Omega$ ()
- (c) $20\ \Omega$ ()
- (d) $40\ \Omega$ ()

45. The unit of inductance is:

- (a) **Henry** ()
- (b) Farad ()
- (c) Ohm ()
- (d) Tesla ()

46. The unit of capacitance is:

- (a) Henry ()
- (b) **Farad** ()
- (c) Volt ()
- (d) Watt ()

47. Capacitive reactance decreases when frequency:

- (a) Decreases ()
- (b) Remains constant ()
- (c) **Increases** ()
- (d) Becomes zero ()

48. Inductive reactance increases when frequency:
- (a) Decreases ()
 - (b) Increases** ()
 - (c) Becomes zero ()
 - (d) Remains constant ()
49. The opposition offered by an AC circuit is called:
- (a) Conductance ()
 - (b) Resistance ()
 - (c) Impedance** ()
 - (d) Admittance ()
50. Capacitors connected in parallel result in:
- (a) Lower total capacitance ()
 - (b) Higher total capacitance** ()
 - (c) Zero capacitance ()
 - (d) Infinite resistance ()
51. A transistor has how many terminals?
- (a) 2 ()
 - (b) 3** ()
 - (c) 4 ()
 - (d) 5 ()
52. The three terminals of a BJT are:
- (a) Gate, Drain, Source ()
 - (b) Anode, Cathode, Gate ()
 - (c) Emitter, Base, Collector** ()
 - (d) Input, Output, Ground ()
53. In an NPN transistor, the arrow on the emitter points:
- (a) Inward ()
 - (b) Outward** ()
 - (c) Upward ()
 - (d) Downward ()
54. In a PNP transistor, the emitter arrow points:
- (a) Outward ()
 - (b) Inward** ()
 - (c) Upward ()
 - (d) Horizontal ()
55. The main function of a transistor is:
- (a) Energy storage ()
 - (b) Amplification and switching** ()
 - (c) Rectification ()
 - (d) Heating ()

56. Transistor biasing is required to:
- (a) Increase frequency ()
 - (b) Establish proper operating point** ()
 - (c) Reduce voltage completely ()
 - (d) Increase resistance ()
57. The collector current is controlled by:
- (a) Base current** ()
 - (b) Emitter resistance ()
 - (c) Supply frequency ()
 - (d) Temperature only ()
58. Which region is used for amplification?
- (a) Cut-off region ()
 - (b) Active region** ()
 - (c) Saturation region ()
 - (d) Breakdown region ()
59. In saturation, a transistor acts like:
- (a) Open switch ()
 - (b) Closed switch** ()
 - (c) Capacitor ()
 - (d) Inductor ()
60. In cut-off region, a transistor acts like:
- (a) Closed switch ()
 - (b) Open switch** ()
 - (c) Amplifier ()
 - (d) Oscillator ()
61. An amplifier increases:
- (a) Frequency only ()
 - (b) Signal strength** ()
 - (c) Resistance ()
 - (d) Capacitance ()
62. Voltage gain is defined as:
- (a) Output voltage / Input voltage** ()
 - (b) Input voltage / Output voltage ()
 - (c) Output current / Input current ()
 - (d) Power / Resistance ()
63. Which transistor configuration provides high voltage gain?
- (a) Common Base ()
 - (b) Common Emitter** ()
 - (c) Common Collector ()
 - (d) None ()

64. Common Collector configuration is also known as:
- (a) **Emitter Follower** ()
 - (b) Voltage Doubler ()
 - (c) Oscillator ()
 - (d) Rectifier ()
65. The Common Emitter amplifier provides:
- (a) Current gain only ()
 - (b) Voltage gain only ()
 - (c) **Both current and voltage gain** ()
 - (d) No gain ()
66. In Common Base configuration, the input is applied between:
- (a) Collector and Base ()
 - (b) **Emitter and Base** ()
 - (c) Collector and Emitter ()
 - (d) Ground and Collector ()
67. RC coupling is commonly used in:
- (a) **Audio amplifiers** ()
 - (b) Transformers ()
 - (c) Batteries ()
 - (d) Motors ()
68. Loading effect in an amplifier causes:
- (a) Increase in gain ()
 - (b) **Reduction in gain** ()
 - (c) Increase in frequency ()
 - (d) No change ()
69. A single-stage CE amplifier uses:
- (a) **One transistor** ()
 - (b) Two transistors ()
 - (c) Three transistors ()
 - (d) Four transistors ()
70. Which configuration has high input impedance?
- (a) Common Base ()
 - (b) **Common Collector** ()
 - (c) Common Emitter ()
 - (d) None ()
71. FET stands for:
- (a) **Field Effect Transistor** ()
 - (b) Frequency Effect Transistor ()
 - (c) Fast Electronic Transistor ()
 - (d) Fixed Emitter Transistor ()

72. JFET stands for:

- (a) **Junction Field Effect Transistor** ()
- (b) Junction Frequency Effect Transistor ()
- (c) Joint Field Electronic Transistor ()
- (d) Junction Feedback Transistor ()

73. The terminals of a FET are:

- (a) Base, Collector, Emitter ()
- (b) **Gate, Drain, Source** ()
- (c) Anode, Cathode, Gate ()
- (d) Input, Output, Ground ()

74. FET is a:

- (a) Bipolar device ()
- (b) **Unipolar device** ()
- (c) Mechanical device ()
- (d) Optical device ()

75. Which terminal controls current flow in a FET?

- (a) Source ()
- (b) Drain ()
- (c) **Gate** ()
- (d) Body ()

76. The output current in a FET flows between:

- (a) Gate and Source ()
- (b) Gate and Drain ()
- (c) **Drain and Source** ()
- (d) Base and Collector ()

77. Compared to BJT, FET has:

- (a) Lower input impedance ()
- (b) **Higher input impedance** ()
- (c) Higher base current ()
- (d) Lower efficiency ()

78. FET is mainly a:

- (a) Current-controlled device ()
- (b) **Voltage-controlled device** ()
- (c) Heat-controlled device ()
- (d) Frequency-controlled device ()

79. FET amplifiers are preferred in measuring instruments because of:

- (a) Low input impedance ()
- (b) **High input impedance** ()
- (c) High power loss ()
- (d) Low gain ()

80. Which device consumes very little input current?
- (a) BJT ()
 - (b) FET** ()
 - (c) SCR ()
 - (d) Diode ()
81. Communication means:
- (a) Transfer of information** ()
 - (b) Transfer of power ()
 - (c) Transfer of heat ()
 - (d) Transfer of resistance ()
82. Radio waves travel with the speed of:
- (a) Sound ()
 - (b) Light** ()
 - (c) Water ()
 - (d) Wind ()
83. Fading in radio communication refers to:
- (a) Increase in signal strength ()
 - (b) Variation in received signal strength** ()
 - (c) Change in frequency ()
 - (d) Change in voltage ()
84. Modulation is necessary for:
- (a) Efficient transmission of signals** ()
 - (b) Increasing resistance ()
 - (c) Reducing frequency to zero ()
 - (d) Battery charging ()
85. The process of recovering the original signal is called:
- (a) Modulation ()
 - (b) Amplification ()
 - (c) Demodulation** ()
 - (d) Oscillation ()
86. AM stands for:
- (a) Amplitude Modulation** ()
 - (b) Audio Modulation ()
 - (c) Automatic Modulation ()
 - (d) Amplified Modulation ()
87. FM stands for:
- (a) Frequency Measurement ()
 - (b) Frequency Modulation** ()
 - (c) Fast Modulation ()
 - (d) Frequency Multiplication ()

88. In AM, which quantity varies?

- (a) Frequency ()
- (b) Phase ()
- (c) **Amplitude** ()
- (d) Wavelength ()

89. In FM, which quantity varies?

- (a) Amplitude ()
- (b) **Frequency** ()
- (c) Resistance ()
- (d) Power ()

90. FM transmission generally provides:

- (a) **Better noise immunity** ()
- (b) Higher noise ()
- (c) Lower quality ()
- (d) No advantage ()

91. Solar energy is a:

- (a) Non-renewable source ()
- (b) **Renewable source** ()
- (c) Fossil fuel ()
- (d) Nuclear fuel ()

92. A photovoltaic cell converts:

- (a) Heat into sound ()
- (b) **Light into electricity** ()
- (c) Electricity into light ()
- (d) Mechanical energy into light ()

93. The basic unit of a solar panel is:

- (a) **Solar cell** ()
- (b) Battery ()
- (c) Transformer ()
- (d) Capacitor ()

94. A group of solar cells connected together forms a:

- (a) **Module** ()
- (b) Resistor ()
- (c) Rectifier ()
- (d) Inverter ()

95. A collection of solar panels is called:

- (a) **Array** ()
- (b) Battery bank ()
- (c) Generator ()
- (d) Rectifier ()

96. Which factor affects the output of a solar panel?

- (a) Sunlight intensity ()
- (b) Temperature ()
- (c) Shading ()
- (d) **All of the above** ()

97. Solar photovoltaic systems generate:

- (a) AC directly ()
- (b) **DC directly** ()
- (c) Three-phase AC only ()
- (d) Mechanical power ()

98. Which device converts solar DC into AC?

- (a) Transformer ()
- (b) **Inverter** ()
- (c) Rectifier ()
- (d) Stabilizer ()

99. A major advantage of solar energy is:

- (a) Causes pollution ()
- (b) **Renewable and clean** ()
- (c) Requires fuel transport ()
- (d) Produces smoke ()

100. Compared with conventional power generation, solar power:

- (a) Uses fossil fuels ()
- (b) Produces greenhouse gases during operation ()
- (c) **Requires sunlight as fuel** ()
- (d) Uses coal as primary energy source ()

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