

PAPER-I
ELECTRICIAN/ ELECTROPLATER/ LIFT MECHANIC/ LIFT & ESCALATOR
MECHANIC/WIREMAN
(THEORY & EMPLOYABILITY SKILLS)
SEMESTER-I

TIME: 3 HRS.

MARKS: 200

**Note: This paper contains two parts – Part A & Part B.
Attempt all the questions.
All questions carry equal marks.**

PART – A (THEORY)**(MARKS: 150)****Choose the correct answer.**

1. When a capacitor is charged through a DC supply source for infinite time, the final current through it is –

(a) Determined by the resistor	(b) Half of the initial current
(c) Infinite	(d) Zero
2. The Electronic grade solder has a Tin: Lead ratio of

(a) 40:60	(b) 60:40
(c) 35:65	(d) 70:30
3. Generally battery containers are made with –

(a) Hard Rubber	(b) Hard Plastic
(c) Polypropylene	(d) None of these
4. The sheath is used in cables to.....

(a) Provide strength to the cable	(b) Provide proper insulation
(c) Prevent moisture from entering the cable	(d) Avoid chances of corrosion on strands
5. Load of an electrical network determines –

(a) Resistance	(b) Impedance
(c) Current	(d) Voltage
6. The capacitors are used across AC supply for

(a) Power improvement	(b) Power factor improvement
(c) Current improvement	(d) Voltage improvement
7. Which of the following bulbs will have the least resistance?

(a) 230 V, 60 W	(b) 230 V, 100W
(c) 115V, 60W	(d) 115V, 100W
8. The phenomenon of induced magnetism lagging behind the magnetizing force is known as

(a) Eddy currents	(b) Hysteresis
(c) Reluctance	(d) Permeability

9. The..... are tools used for bending, seaming and forming of sheet metal that cannot be done on any regular machine
 (a) Snips (b) Vices
 (c) Stakes (d) Centre Punch
10. In full wave rectifiers the current rating of each diode is to /of the DC output current.
 (a) Equal (b) Half
 (c) Double (d) Three times
11. The type of switch used in Staircase wiring is
 (a) Rotary Switch (b) Push Button
 (c) Two Way Switch (d) One Way Switch
12. When the core becomes magnetically saturated, the increase in magnetic field strength H
 (a) Enhances B drastically
 (b) Decreases the permeability of the core
 (c) Increases the permeability of the core
 (d) Almost has no effect on magnetic induction B.
13. The nominal voltage of Lead-acid cell in an open circuit is approximately.....
 (a) 2 Volts (b) 1.5 Volts
 (c) 1.25 Volts (d) 2.5 Volts
14. In Sinusoidal AC supply, the V_{RMS} is equal to.....
 (a) $2 \times V_{max}$ (b) $V_{max} / \sqrt{2}$
 (c) $V_{max} / 2$ (d) $\sqrt{2} \times V_{max}$
15. The capacitive Reactance X_c is given by.....
 (a) $2\pi f C$ (b) $f C / 2\pi$
 (c) $1 / 2\pi f C$ (d) $2\pi / f C$
16. While selecting a fixed value resistor, its main specifications to be considered are....
 (a) Voltage, wattage and tolerance in percents.
 (b) Voltage, Current and Size
 (c) Value in Ohms, Voltage and size
 (d) Value in Ohms, Wattage and tolerance of its value
17. The specific gravity of a Lead-acid battery's electrolyte is measured by.....
 (a) Hydrometer (b) Barometer
 (c) Hygrometer (d) Pyrometer
18. Power factor of a pure resistive circuit is.....
 (a) Zero (b) Lagging
 (c) Leading (d) Unity

Contd....3/-

19. The function of the choke coil in fluorescent lamp circuit is
- Only to limit the operating current
 - Only to produce starting voltage impulse
 - To produce starting voltage impulse and to limit the operating current
 - To limit the heating current of filaments
20. AC mains supply in India has the frequency of.....
- 100 Hz
 - 60 Hz
 - 50 Hz
 - 40 Hz
21. A current of 1 micro ampere = ampere
- 10^{-9}
 - 10^{-6}
 - 10^{-4}
 - 10^{-3}
22. The fixed value Carbon Resistors are generally not more than..... Watts.
- 10
 - 6
 - 4
 - 2
23. In an Inductive AC circuit, current.....
- Lags behind the voltage by 180°
 - Leads the Voltage by 90°
 - Lags behind the Voltage by 90°
 - Is in phase with the Voltage
24. In a simple circuit consisting of a resistor of value R, when voltage V is kept constant, then the current.....
- I is directly proportional to R
 - $I=R$
 - I is inversely proportional to R
 - I is constant irrespective of changes in R
25. The MCB's working is based on.....
- Thermal operation
 - Thermal and Magnetic operations
 - Magnetic operation
 - Simple Mechanical Switching operation
26. The tripping time of ELCBs is usually less than.....
- 30 ms
 - 80 ms
 - 100 ms
 - 200 ms
27. In star connection of 3 Phase AC supply, line Voltage is equal to.....
- Phase Voltage
 - $\sqrt{3}$ x Phase Voltage
 - $\sqrt{2}$ x Phase Voltage
 - 3 x Phase Voltage
28. Which of the following materials is a good Insulator?
- Aluminium
 - Copper
 - Porcelain
 - Silver
29. Which of the following materials is a good conductor?
- Mica
 - Copper
 - Rubber
 - Ebonite

30. The electrolyte used in Aluminum anodizing is dilute.....
 (a) Nitric acid (b) Aluminum sulphate solution
 (c) Hydrochloric acid (d) Sulphuric acid
31. The positively charged ions are called.....
 (a) Cations (b) Atoms
 (c) Anions (d) Neutrons
32. The.....of a substance is the amount deposited on the Electrode on passing a steady electric current of one ampere for One second through its solution.
 (a) Equivalent weight (b) Atomic weight
 (c) Electro chemical equivalent (d) Chemical equivalent
33. The..... circuit is usually operated by adjusting the variable resistor until no current flows in the ammeter.
 (a) Resistors in parallel (b) Resistors in series
 (c) Wheatstone bridge (d) Feedback
34. Certain materials normally behave as insulators but allow for more valence electrons to be made available by thermal energy. These elements are known as.....
 (a) Semiconductors (b) Conductors
 (c) Insulators (d) Conduction band
35. The has a hammer face which is used to drive in nails and the other end is used for pulling out nails from the wood.
 (a) Mallet (b) Claw Hammer
 (c) Ball Pen Hammer (d) Axe
36. An electrical component with resistance and inductance elements with draw --
 (a) Leading pf Current (b) Lagging pf Current
 (c) Unity lpf Current (d) Zero pf Current
37. The graph between an alternating quantity and time is called.....
 (a) Bar graph (b) Pie chart
 (c) Curve (d) Waveform
38. The Capacitive Reactance.....
 (a) Decreases as frequency increases (b) Applies only to series RLC circuits
 (c) Increases as frequency increases (d) Increases with the time constant
39. Pure silicon crystal atoms contain..... valence electrons as a result of covalent bonding.
 (a) 2 (b) 4
 (c) 8 (d) 16
40. In case of electrical short circuit of a sub-circuit in domestic connection --
 (a) Throw water to extinguish the fire (b) Switch of the power supply first
 (c) Run to intimate the power house (d) Do not act