

PAPER –I  
ELECTRICIAN  
(THEORY)  
SEMESTER – IV

TIME: 3 HRS.

MARKS: 150

Note: Attempt all the questions.  
All questions carry equal marks.

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**Choose the correct answer:**

1. The.....are used to protect the insulation of cables getting damaged by the sharp edges of the holes in the metal sheet of the cabinets/panels.  
(a) Clips (b) Buffers (c) Grommet (d) Ferrules
2. Which of the following appliances will not work on DC supply?  
(a) Call bell (b) Electric Iron  
(c) Buzzer (d) Electric Kettle
3. The heating element of an immersion water heater is made of.....wire.  
(a) Copper (b) Nichrome (c) Aluminum (d) Tungsten
4. The insulating material used inside the immersion water heater's tube is.....  
(a) Porcelain (b) Magnesium oxide  
(c) Zinc oxide (d) Glass
5. To control the water pressure inside the tank of the Geyser and thus protecting the tank from exploding, a.....is provided in it.  
(a) Pressure relief valve (b) Sacrificial anode rod  
(c) Drain valve (d) Dip tube
6. The.....is insulated from the heating element of an electric iron by asbestos sheet of the same shape.  
(a) Sole plate (b) Top cover  
(c) Heel plate (d) Pressure plate
7. The upward travelling heat, developed in the heating element of an electric Iron due to conduction and radiation is prevented by.....  
(a) Sole plate (b) Pressure plate  
(c) Asbestos sheet (d) Heel plate
8. The no load speed of an electric mixer motor is about.....rpm.  
(a) 3000 (b) 6000 (c) 12000 (d) 18000
9. The Agitator wash technique is used in.....type of washing machine.  
(a) Semi automatic (b) Fully automatic  
(c) Top loading (d) Front loading

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10. Discharging the detergent particles trapped in the washed fabric is known as.....  
(a) Wash cycle (b) Rinse cycle  
(c) Spin cycle (d) Drain cycle
11. Which of the following has nothing to do with the Hydro power?  
(a) Burning (b) Gravity  
(c) Solar energy (d) Water cycle
12. Which of the following is not a constituent of Hydro Power plant?  
(a) Generator (b) Turbine  
(c) Boiler (d) Dam
13. In Hydro Power.....of potential energy is converted into electrical energy.  
(a) 90-98% (b) 80-90% (c) 70-80% (d) 60-70%
14. At present level of technology, which of the following method of generating electric power from sea is most advantageous?  
(a) Tidal power (b) Ocean thermal energy conservation  
(c) Ocean currents (d) Wave power
15. A solar module is made up of large number of.....  
(a) Solar panels (b) Solar cells  
(c) Solar array (d) PV system
16. The.....limits the rate at which electric current is added or drawn from the batteries.  
(a) DC combiner (b) Solar module  
(c) Charge controller (d) Inverter
17. A mark on the V & I curve of a solar cell having maximum value of  $V \times I$  is called.....  
(a) Maximum voltage point (b) Maximum current point  
(c) Wattage of solar cell (d) Maximum power point
18. The.....are the conductors which connect the consumer's terminals to the distribution.  
(a) Distributors (b) Service main  
(c) Feeders (d) Lines
19. In the cables, the location of the fault is usually found out by comparing.....  
(a) The Resistance of the conductor  
(b) The Inductance of the conductor  
(c) The capacitance of the insulated conductor  
(d) All the above
20. Underground cables are laid at sufficient depth.....  
(a) To minimize the effect of shocks & vibrations due to vehicles etc.  
(b) To minimize the temperature stress  
(c) To avoid being unearthed easily due to removal of soil  
(d) All of these

Contd....3/-

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21. The breakdown voltage of a cable depends on.....  
(a) Presence of moisture (b) Working temperature  
(c) Time of application of the voltage (d) All of these
22. The distributors for residential areas are.....  
(a) Single phase two wire (b) Three phase three wire  
(c) Three phase four wire (d) Two phase two wire
23. Which of the following faults is most likely to occur in cables?  
(a) Cross or short circuited fault (b) Open circuit fault  
(c) Breakdown of cable insulation (d) All of these
24. The transmission line insulators are made of.....  
(a) Glass (b) Porcelain (c) Wood (d) PVC
25. The material commonly used for sheaths of underground cables is.....  
(a) Lead (b) Rubber (c) Copper (d) Iron
26. A feeder in a transmission system feeds power to.....  
(a) Distributors (b) Generating stations  
(c) Service mains (d) All of these
27. The steel used in steel cored conductors is usually.....  
(a) Alloy steel (b) Stainless steel  
(c) Mild steel (d) High speed steel
28. Transmission voltage of 11KV is normally used for distances up to.....  
(a) 20 – 25 km (b) 40 – 50 km  
(c) 60 – 70 km (d) 80 – 100 km
29. In aluminum conductors, the steel core is provided to.....  
(a) Compensate for skin effect (b) Neutralize proximity effect  
(c) Reduce line inductance (d) Increase the tensile strength
30. Pin type insulators are generally not used for voltages beyond.....  
(a) 1KV (b) 11KV (c) 22KV (d) 33KV
31. For transmission of power over a distance of 200km, the transmission voltage should be ...  
(a) 132KV (b) 60KV (c) 33KV (d) 11KV
32. The electric lightening voltage is approximately.....volt.  
(a)  $3 \times 10^6$  (b)  $2 \times 10^5$  (c)  $2 \times 10^8$  (d)  $2 \times 10^3$
33. The load connected to the UPS should not be more than.....of the rated capacity of UPS.  
(a) 110% (b) 100% (c) 70 to 80% (d) 30%

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34. The indoor.....is used to connect two or more equipments located side by side, when the currents are very high.  
(a) Current transformer (b) Potential transformer  
(c) Bus-bar (d) Auto transformer
35. The.....are specially designed to interrupt the very high fault currents, which may be ten or more times the normal operating currents.  
(a) Contactors (b) Circuit breakers  
(c) Electromagnetic Relays (d) Current transformers
36. Which of the following is not a type of circuit breakers?  
(a) Sand blast circuit breaker (b) Oil circuit breaker  
(c) Air blast circuit breaker (d) Vacuum circuit breaker
37. The advantages of using cables over overhead transmission lines is.....  
(a) Easy maintenance (b) Low cost  
(c) Can be used in congested areas (d) Can be used in high voltage circuits
38. Which of the following bus-bar schemes has the lowest cost?  
(a) Ring bus bar scheme (b) Single bus bar scheme  
(c) Breaker & Half scheme (d) Main & transfer scheme
39. By which of the following is a bus-bar rated?  
(a) Current only  
(b) Current and voltage  
(c) Current, voltage and frequency  
(d) Current, voltage, frequency and short circuit current
40. A circuit is disconnected by isolator when.....  
(a) Line is energized (b) There is no current in the line  
(c) Line is on full load (d) Circuit breaker is not opened
41. In a sub-station the..... are not installed.  
(a) Exciters (b) Series capacitors  
(c) Shunt reactors (d) Voltage transformers
42. Which of the following equipment for regulating the voltage in distribution feeder will be most economical?  
(a) Static condenser (b) Synchronous condenser  
(c) Tap changing transformer (d) Booster transformer
43. When the SCR is turned ON, the voltage across it is about.....  
(a) 0 Volt (b) 10 Volt (c) 0.1 Volt (d) 1 Volt

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44. AC power in a load can be controlled by connecting.....  
(a) 2 SCRs in series  
(b) 2 SCRs in parallel  
(c) 2 SCRs in parallel opposition  
(d) Combination of 2 SCRs in series and parallel
45. The ON-state voltage drop across the IGBTs is.....  
(a) Less than that across MOSFETs  
(b) Greater than that across MOSFETs  
(c) Equal to that of the MOSFETs  
(d) Zero
46. Which of the following type of load should not be used with UPS?  
(a) Medical instruments (b) High power motors  
(c) Computers (d) Lab instruments
47. In a DC drive the.....is used as a speed feedback device.  
(a) Stroboscope (b) Tachometer  
(c) Speed governor (d) Any one of the above
48. In high power DC drives, the final power control device used is.....  
(a) Diode (b) SCR (c) IGBT (d) TRIAC
49. In AC drives the speed of the AC motor is controlled by varying.....  
(a) Voltage and frequency (b) Voltage and current  
(c) Current and frequency (d) Voltage and inductance
50. The switching power devices used in AC drives are.....  
(a) MOSFET (b) TRIAC (c) SCR (d) IGBT

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