

036/2016

Maximum : 100 marks

Time : 1 hour and 15 minutes

1. Which of the following fire extinguisher is suitable for a live electrical fire?
(A) Halon (B) Water
(C) Foam (D) Liquefied chemical
2. The pliers used to make wire hooks and loops is :
(A) Combination pliers (B) Long nose pliers
(C) Round nose pliers (D) Flat nose pliers
3. When temperature of carbon increases, its resistance?
(A) Decreases (B) Increases
(C) Remains same (D) None of these
4. The specification of a given screwdriver is (75 mm × 0.4 mm × 2.5 mm) 0.4 mm stands for :
(A) Length (B) Thickness of tip of blade
(C) Diameter (D) Handle length
5. The unit of Specific resistance is :
(A) Ohm - meter (B) Ohm / meter
(C) Ohm (D) None of these
6. The unit of dielectric strength is :
(A) kV/mm (B) kW/mm
(C) Ohm/mm (D) Ampere
7. The resistance of 100W, 250V electric lamp is :
(A) 62.5 Ohms (B) 625 Ohms
(C) 6250 Ohms (D) 325 Ohms

8. Three 30 ohms resistors are connected in parallel. The effective resistance of the combination will be :
- (A) 10 Ohms (B) 90 Ohms
(C) 25 Ohms (D) 15 Ohms
9. Three resistors 27 ohms, 47 ohms and 68 ohms are connected in parallel. What is the total resistance?
- (A) Less than 27 ohms (B) Greater than 68 ohms
(C) Between 27 and 47 ohms (D) None of these
10. The type of watt meter suitable to measure DC power is :
- (A) Induction type (B) Dynamo meter type
(C) LPF type (D) None of these
11. If the area of a metal wire of a given length is doubled, its resistance will be :
- (A) Doubled (B) Halved
(C) Remains same (D) Four times more
12. Which one of the following is called as valance electron in an atom?
- (A) No. of electrons in inner orbit (B) No. of electrons in the N shell
(C) No. of electrons, in the outer most orbit (D) No. of electrons in the M shell
13. Interpoles are connected in :
- (A) Series with armature (B) Series with field
(C) Parallel with armature (D) None of these
14. In three phase delta connection, line voltage is :
- (A) $\sqrt{3} V_{ph}$ (B) $V_{ph}/\sqrt{3}$
(C) Same as phase voltage (D) Same as line current
15. Cells are connected in series to get :
- (A) More voltage (B) More current
(C) More power (D) None of these

16. No load test on a transformer is conducted to measure :
- (A) Copper loss (B) Core loss
(C) Total loss (D) Efficiency
17. 1 micro ohm is _____ ohm.
- (A) 1/1000000 (B) 1/100000
(C) 1/10000 (D) 1/1000
18. In SI unit one coulomb of electricity corresponds to a quantity of electrons about :
- (A) 6.24×10^{18} (B) 6.24×10^6
(C) 62.4×10^8 (D) 62.4×10^{18}
19. Which of the following does not depend on the resistance of a conductor?
- (A) Length (B) Material
(C) Voltage (D) Temperature
20. Which of the following material have negative temperature coefficient of resistance?
- (A) Copper (B) Aluminium
(C) Tungsten (D) Carbon
21. How many 6 volt lamps are required to make a decorative serial set of operating voltage of 240 V?
- (A) 38 (B) 40
(C) 42 (D) 36
22. What is the use of Eureka wire?
- (A) Rheostat (B) Heating element
(C) Earth wire (D) Winding wire
23. Which is not a property of an insulator?
- (A) High heat conductivity (B) High permittivity
(C) High dielectric strength (D) High mechanical strength

24. In Leclanche cell manganese dioxide acts as :
- (A) Positive electrode (B) Negative electrode
(C) Depolarizer (D) Electrolyte
25. Positive electrode in a dry cell is :
- (A) Zinc (B) Copper
(C) Carbon (D) None of these
26. In a lead acid battery 6 positive electrodes are there. The numbers of negative plates are :
- (A) 4 (B) 5
(C) 7 (D) 8
27. The capacity of the storage battery is expressed in :
- (A) Voltage rating (B) Ampere rating
(C) Ampere-hour rating (D) None of these
28. Permanent magnets are made from :
- (A) Soft iron piece (B) Alnico
(C) Nichrome (D) Graphite
29. The material slightly repelled by a magnet is called :
- (A) Magnetic (B) Paramagnetic
(C) Diamagnetic (D) Ferromagnetic
30. The unit of magnetic reluctance is :
- (A) Ampere-turns (B) Weber / m²
(C) Ampere turns / Weber (D) None of these
31. Tesla is the unit of :
- (A) Flux (B) Flux density
(C) MMF (D) Reluctance
32. The rule used to determine the direction of induced current in a dc generator :
- (A) Fleming's left hand rule (B) Lenz's law
(C) Right hand thumb rule (D) Fleming's right hand rule

33. Split rings are made from :
- (A) Gun metal (B) Brass
(C) Hard drawn copper (D) Bronze
34. The winding have many turns of thin wire in dc generator is :
- (A) Series field winding (B) Armature winding
(C) Shunt field winding (D) None of these
35. The dc generator used for welding purpose is :
- (A) Cumulative compound (B) Shunt
(C) Differential compound (D) Series
36. The type of dc motor used for traction purpose is :
- (A) Shunt motor (B) Long shunt motor
(C) Series motor (D) Short shunt motor
37. The connection of no volt coil in dc 3 point starter across dc supply is in series with :
- (A) Armature (B) Starting resistor
(C) Over load relay (D) Shunt field
38. Ward- Leonard system of speed control is used in dc shunt motor to get :
- (A) Above normal speed only (B) Below normal speed only
(C) From zero to desired value (D) Normal constant speed
39. The fuse unit is made from :
- (A) Bakelite (B) Porcelain
(C) Ceramic (D) Iron
40. The joint used in over head lines for extending the length is :
- (A) Rat tail joint (B) Married joint
(C) Western union joint (D) Aerial tap joint
41. As per IE Rules how much load is permitted in a power sub circuit :
- (A) 2500 W (B) 4000 W
(C) 3000 W (D) 5000 W

42. The colour used for neutral wire in supply system is :
- (A) Blue (B) Black
(C) Yellow (D) Green
43. The recommended length of pipe used as earth electrode is :
- (A) Not less than 2.25m (B) Not less than 2.5 m
(C) Not less than 2m (D) None of these
44. The size of the plate used for earthing electrode is :
- (A) 60 cm × 60 cm (B) 50 cm × 50 cm
(C) 45 cm × 45 cm (D) 40 cm × 40 cm
45. The test used to check whether the switches are connected in live wire or not is :
- (A) Continuity test (B) Earth test
(C) Polarity test (D) Insulation test
46. 2 pin sockets should not be used in domestic wiring unless the appliance to be connected is :
- (A) Double earthed (B) Double insulated
(C) Controlled by ELCB (D) Controlled by MCB
47. I_{RMS} value is equal to :
- (A) $0.637 I_{MAX}$ (B) $0.707 I_{MAX}$
(C) $6.37 I_{MAX}$ (D) $7.07 I_{MAX}$
48. Form factor of a sinusoidal wave is :
- (A) 11.1 (B) 1.11
(C) 0.111 (D) None of these
49. The unit of inductive reactance is :
- (A) Henry (B) Ohm
(C) Ampere turn (D) Susceptance

50. The phase difference between any two adjacent phases in a three phase system is :
- (A) 90° (B) 120°
 (C) 180° (D) 360°
51. To provide inductance in a circuit which is used?
- (A) Resistor (B) Choke
 (C) Capacitor (D) All of these
52. In which load power factor may be unity?
- (A) Inductive reactance with resistance (B) Non inductive resistance
 (C) Capacitive reactance (D) None of these
53. The reciprocal of impedance is :
- (A) Susceptance (B) Conductance
 (C) Admittance (D) Inductance
54. The effect of low power factor in an electrical system is :
- (A) Efficiency will be more (B) Current will be increased
 (C) Current will be reduced (D) None of these
55. In a 3 phase system voltage across phase to phase is called :
- (A) Phase voltage (B) Line voltage
 (C) EMF (D) Terminal voltage
56. Line voltage of a star connected 3 phase circuit is 415 V. The phase voltage will be :
- (A) 415 V (B) 210 V
 (C) 220 V (D) 240 V
57. The formula for reactive power in a 3 phase system is :
- (A) $3V_L I_L \cos\theta$ (B) $\sqrt{3}V_L I_L \cos\theta$
 (C) $\sqrt{3}V_L I_L \sin\theta$ (D) $\sqrt{3}V_p I_p \sin\theta$

58. The number of slip rings required for a rotating field type 3 phase alternator is :
- (A) 2 (B) 3
(C) 12 (D) 6
59. Alternators are rated in :
- (A) KW (B) HP
(C) KVA (D) KVAR
60. The speed of 6 pole 60 Hz alternator is :
- (A) 600 rpm (B) 1200 rpm
(C) 1800 rpm (D) 800 rpm
61. Core loss in a transformer is constant during :
- (A) Quarter load (B) Half load
(C) Full load (D) All load
62. Condition for maximum efficiency of a transformer is :
- (A) Copper loss is equal to iron loss (B) Copper loss is more than iron loss
(C) Copper loss is zero (D) None of these
63. The full load copper loss in a transformer is 900 watts. What will be the copper loss at half load?
- (A) 1300 W (B) 500 W
(C) 225 W (D) 450 W
64. In which part of a transformer hysteresis loss will occur?
- (A) Core (B) Windings
(C) Transformer oil (D) Conservator
65. The standard secondary rated voltage of a potential transformer is :
- (A) 150 V (B) 110 V
(C) 200 V (D) 75 V

66. The direction of rotation of stator magnetic field depends up on :
- (A) Supply voltage (B) Type of stator winding
(C) Phase sequence of the supply (D) All of these
67. When speed of induction motor increases the rotor frequency will?
- (A) Decreases (B) Increases
(C) Remains constant (D) Zero
68. Inching operation is also called as :
- (A) Starting (B) Stopping
(C) Braking (D) Jogging
69. How many contactors are there in a fully automatic star delta starter?
- (A) 1 (B) 3
(C) 4 (D) 6
70. The device used to store electrical energy in the form of electro static energy is :
- (A) Inductor (B) Resistor
(C) Thermistor (D) Capacitor
71. The type of capacitor used in capacitor start motor is :
- (A) Electrolytic capacitor (B) Ceramic capacitor
(C) Disc capacitor (D) Mica capacitor
72. Universal motor is used in :
- (A) Fan (B) Refrigerator
(C) Jet pump (D) Food mixer
73. The unit of sensitivity of meter is :
- (A) Volt / ohm (B) Amp / ohm
(C) Ohm / amp (D) Ohm / volt
74. Control spring used in an instrument is made from :
- (A) Bronze (B) Copper
(C) Phosphor bronze (D) Brass