

135/2015

Maximum : 100 marks

Time : 1 hour and 15 minutes

1. In a slip ring induction motor slip rings are connected to the :
(A) Rotor (B) Stator
(C) Exciting field (D) Centrifugal switch
2. Which motor is used for electric traction?
(A) DC compound motor (B) Three phase induction motor
(C) DC series motor (D) DC shunt motor
3. How many slip rings are there in a slip ring induction motor?
(A) 2 (B) 3
(C) 4 (D) 6
4. The stator winding of a 3ϕ slip ring induction motor has 4 poles, How many number of poles in the rotor winding?
(A) 2 (B) 4
(C) 6 (D) 8
5. Which type of capacitor is used in single phase capacitor type motor?
(A) Ceramic capacitor (B) Mica capacitor
(C) Electrolytic capacitor (D) Paper capacitor
6. What is the effect of single phasing in 3ϕ induction motor while running?
(A) The motor will not run (B) Burn out due to overheating
(C) No change in running (D) Will make humming noise
7. What is the maximum safe temperature of class E insulation?
(A) 90°C (B) 130°C
(C) 120°C (D) 150°C

8. Which type of insulation tape is not suitable for insulation purpose?
(A) Varnished cambric tape (B) Plastic tape
(C) Rubber tape (D) Friction tape
9. Which of the following motor does not have a winding or commutator or brush is?
(A) DC shunt (A) DC shunt motor (B) Stepper motor
(C) Slip ring induction motor (D) Universal motor
10. Which colour is recommended for earth connection?
(A) Red (B) Black
(C) Green (D) Blue
11. Which one is the proper location for mounting main switch gear in a building?
(A) In middle position of the building
(B) Separate room under stair case
(C) Accessible place near the termination of service line
(D) Near the gate
12. What is the unit of work done in SI units?
(A) Erg (B) KG Meter
(C) Dyne (D) Joule
13. The power factor of a purely resistive circuit is :
(A) Leading (B) Zero
(C) Unity (D) Lagging
14. An alternating current or voltage is that which :
(A) Changes direction only
(B) Changes magnitude only
(C) Changes both magnitude and direction
(D) None of the above
15. Primary winding of a transformer :
(A) Is always a high voltage winding (B) Is always a low voltage winding
(C) Could either low voltage or high voltage (D) None of these

16. Megger is used to measure :
- (A) Earth resistance (B) Insulation resistance
(C) Break down voltage of installation (D) None of these
17. Moving iron type instruments are used on :
- (A) AC supply only (B) DC supply only
(C) Both AC and DC (D) None of these
18. Normally the moving iron instruments are provided with :
- (A) Eddy current damping (B) Air friction damping
(C) Fluid friction damping (D) None of these
19. The gas inside the inner discharge tube of a sodium vapour lamp is :
- (A) Argon (B) Neon
(C) Helium (D) Hydrogen
20. Alternators are usually designed to generate :
- (A) Variable frequencies (B) Definite frequency
(C) Definite current (D) Definite power
21. When the speed of the alternator increases the frequency :
- (A) Increases (B) Decreases
(C) Remains constant (D) Changes
22. In AC circuit the ratio of KW/ KVA represents :
- (A) Form factor (B) Power factor
(C) Load factor (D) None of these
23. The reactance of a 2H choke coil at 100 Hz is :
- (A) 100 Ω (B) 216 Ω
(C) 718 Ω (D) 1256 Ω
24. The path of the magnetic flux in a transformer has :
- (A) Low resistance (B) High resistance
(C) Low reluctance (D) High conductivity

25. The instrument used for measuring a resistance of $100\text{M } \Omega$ is :
- (A) Ohm meter (B) Megger
(C) Multi meter (D) VTVM
26. Which of the following meters has the best accuracy?
- (A) Moving iron meter (B) Moving coil meter
(C) Rectifier type (D) Thermocouple meter
27. What is the recommended maximum pre heating temperature allowed in winding?
- (A) 60°C (B) 75°C
(C) 90°C (D) 100°C
28. The frequency generated by a 8 pole alternator rotating at 600 rpm will be :
- (A) 20 Hz (B) 40 Hz
(C) 60 Hz (D) 80 Hz
29. As compared to an amplifier, a transformer cannot :
- (A) increase output power (B) increase output voltage
(C) increase output current (D) none of three
30. Which of the following is known as metal rectifier :
- (A) Gas tube diode (B) Silicon diode
(C) Copper oxide diode (D) All of the above
31. A single machine which can generate AC or DC as well as AC and DC both is called :
- (A) MG set (B) Synchronous motor
(C) Inverter (D) Rotary converter
32. The commercial unit of Electrical energy is :
- (A) Joule (B) Kilo watt hour
(C) Watt- hour (D) Ampere hour
33. How many number of positive and negative plates are placed in a 9 plate lead acid cell?
- (A) 4 positive plate and 4 negative plate (B) 5 positive plate and 4 negative plate
(C) 5 positive plate and 5 negative plate (D) 4 positive plate and 5 negative plate

34. The unit of resistivity is :
- (A) Ω (B) Ω/m
(C) Ωm (D) mho
35. The resistance of a perfect insulator is :
- (A) Zero (B) 1Ω
(C) $20 M\Omega$ (D) Infinity
36. The form factor is the ratio of :
- (A) Average value to rms value (B) Rms value to average value
(C) Peak value to rms value (D) None
37. Unit of flux density :
- (A) Weber (B) Tesla
(C) AT/m (D) H/m
38. The basic principle of electromagnetic induction is :
- (A) Fleming's left hand rule (B) Steinmetz law
(C) Ohm's law (D) Faraday's law
39. Which one of the following instruments is used for measuring specific gravity?
- (A) Lactometer (B) Barometer
(C) Voltmeter (D) Hydrometer
40. Electrolyte used in nickel iron cell is :
- (A) Dil.HCl (B) Dil.H₂SO₄
(C) NaOH (D) KOH
41. A semiconductor in its purest form is known as :
- (A) Super conductor (B) Extrinsic conductor
(C) Insulator (D) Intrinsic conductor
42. For a silicon PN junction the barrier potential is about :
- (A) 0.7V (B) 0.001V
(C) 0.07V (D) 1.7V

43. The minimum number of diodes needed for a bridge rectifier is :
- (A) one (B) two
(C) four (D) eight
44. The insulating material belongs to class B insulation is :
- (A) Mica (B) Cotton
(C) Silicon (D) Leatheroid paper
45. The unit of self induction is :
- (A) Weber (B) Henry
(C) Volt (D) Coulomb
46. 3 phase star connection :
- (A) I_L is less than I_{Ph} (B) $I_L = \sqrt{3} I_{Ph}$
(C) I_L more than I_{Ph} (D) $I_L = I_{Ph}$
47. Hysteresis is the phenomenon of _____ in a magnetic circuit.
- (A) Lagging B behind H (B) Lagging H behind B
(C) Setting up constant flux (D) None of these
48. The maximum current that can pass through a 2Ω 2 watts resister will be :
- (A) 1 Amps (B) 2 Amps
(C) 3 Amps (D) 4 Amps
49. The insulation resistance of an electrical machine working at medium voltage should not be less than :
- (A) 1000 Ω (B) 10000 Ω
(C) 100000 Ω (D) 1000000 Ω
50. Distribution transformer are designed to have maximum efficiency nearly :
- (A) At any desired load (B) At full load
(C) At 50 % of full load (D) At no load
51. To a condenser AC supply is given :
- (A) The current will not flow (B) There is no continuous flow of current
(C) The current flows continuously (D) None of the above

52. In which type of DC Motor, Two point starter is used?
(A) Series motor (B) Shunt motor
(C) Long shunt compound motor (D) Short shunt compound motor
53. What is the SWG of copper earth conductor if the maximum circuit current is 15?
(A) No. 14 (B) No. 10
(C) No. 12 (D) No. 8
54. What is the effect of single phasing in three phase induction motor?
(A) Motor will not run (B) Burnt due to overheating.
(C) No change in running (D) Will make humming noise
55. What will happen to the universal motor when it is started without load?
(A) It will not run (B) Run with very low speed
(C) Run with very high speed (D) Run with normal speed.
56. Among the following which device cannot be used as a safety device?
(A) Fuse (B) Earth tester
(C) Circuit breaker (D) ELCB
57. Which type of DC generator is used for battery charging?
(A) Cumulative compound generator (B) Shunt generator
(C) Differential compound generator (D) Series generator
58. What is the thickness of copper plate used for earth electrode?
(A) 6.3 mm (B) 3 mm
(C) 3.3 mm (D) 3.15 mm
59. The core loss in a transformer is constant during :
(A) Quarter load (B) Half load
(C) Full load (D) All load
60. The equivalent resistance of the parallel circuit is _____ than the smallest single resistance :
(A) Greater (B) Smaller
(C) Equal (D) Half

61. Which is the working principle of an instrument transformer?
(A) Self-induction (B) Lenz's law
(C) Mutual induction (D) Fleming's Right hand rule
62. Switch board is fixed at a height of _____ as per IE rules.
(A) 1.5 M (B) 2.5M
(C) 2 M (D) 3 M
63. The rating of fuse is expressed in terms of :
(A) KVA (B) Current
(C) Voltage (D) None
64. A lead acid cell is rechargeable because :
(A) It is a wet cell
(B) Its electrolyte has high specific gravity
(C) Its chemical reaction is reversible
(D) Its electrolyte is H_2SO_4
65. Breather De-hydrating material
(A) Copper sulphate (B) Sodium chloride
(C) Calcium chloride (D) Sodium silicate
66. Instruments which must not be used in the circuit when the power is ON are :
(A) OHM meter and Megger
(B) Phase sequence meter and energy meter
(C) Frequency meter and tong tester
(D) Watt meter and PF meter
67. Which of the following can be called as integrating instrument?
(A) Volt meter (B) Watt meter
(C) Power factor meter (D) Energy meter
68. Buchholz's relay is :
(A) Current sensitive device (B) A frequency sensitive device
(C) A gas actuated device (D) Voltage sensitive device

69. Capacitance is not affected by :
- (A) Plate area (B) Distance between plates
(C) Di-electric material (D) Frequency
70. The back emf of a DC motor depends on the :
- (A) Shape of conductors (B) Field flux
(C) Type of commutator (D) Brush material
71. The flux of a DC motor approaches zero , its speed will approaches :
- (A) Infinity
(B) Zero
(C) A stable value nearer to the rated speed
(D) None of the above
72. In Scott connections the teaser transformer has tapping on :
- (A) 86.6 % of primary (B) 58% of primary
(C) 58% of secondary (D) 50% of secondary
73. If a six nos of lamps are to be installed in Godown wiring we require :
- (A) One SPT and 6 two way switches (B) Two SPT and 6 two way switches
(C) One SPT and 5 two way switches (D) Two SPT and 5 two way switches
74. In small capacity DC machines the yoke is made up of :
- (A) Cast iron (B) Brass
(C) Fabricated steel (D) Aluminum
75. Soldering is done on joints to improve :
- (A) Tensile strength (B) Conductivity
(C) Resistivity (D) Ductility
76. Short circuited field coils are located effectively by the use of a :
- (A) Mega Ohm meter (B) Ohm meter
(C) Growler (D) Clamp on meter

77. The body resistance value of a human being with normal health is about :
- (A) 20 kilo ohm (B) 30 kilo ohm
(C) 1 kilo ohm (D) 5 kilo ohm
78. One lamp can be controlled from five location by using intermediate switches and two way switches. How many number of intermediate switches and two way switches are require to control a lamp from 5 positions?
- (A) Intermediate switches 2 and two way switches 3
(B) Intermediate switch 4 and two way switches 1
(C) Intermediate switch 1 and two way switches 4
(D) Intermediate switch 3 and two way switches 2
79. What happen if the output filter capacitor is opened in a battery charger?
- (A) It will not work (B) Make humming noise
(C) High output (D) Take more output current
80. The metal used for the control spring in an electrical instrument is :
- (A) Steel (B) Nichrome
(C) Hard drawn copper (D) Phosphor bronze
81. Who presided the Congress Session held at Belgarm in 1924?
- (A) Jawaharlal Nehru (B) Mahatma Gandhi
(C) Subash Chandra Bose (D) Tilak
82. One of the conditions required for maintaining National Party Status is among three states a party should win at least :
- (A) 10 seats (B) 11 seats
(C) 12 seats (D) 13 seats
83. Which river is known as "Ganga of the South"?
- (A) Godavari (B) Mahanadi
(C) Krishna (D) Kaveri

84. The Secret Code of Germany to attack Russia in second world war :
- (A) Little Boy (B) Operation Sea
(C) Lend Lease (D) Operation Barbarosa
85. The upper most solid layer of the earth :
- (A) Biosphere (B) Atmosphere
(C) Hydro sphere (D) Lithosphere
86. Who won the Pulitzer Prize on poetry in 2014?
- (A) Vijay Seshadri (B) Gobind Beharilal
(C) Geetha Anand (D) Mahmood Darwish
87. Whose goal is selected goal of the 2014 FIFA World Cup Brazil?
- (A) Lionel Messi (B) James Rodriguez
(C) Gotze (D) Christine Ronald
88. Which countries share border with 'Gaza'?
- (A) Syria – Egypt (B) Labanon – Isarel
(C) Israel – Egypt (D) Syria – Iraq
89. Overall GDP growth of India during 2013-2014 :
- (A) Less than 5% (B) 5 to 8%
(C) 8 to 10% (D) Above 10%
90. Who is known as "Vidhyadhiraja"?
- (A) Vaghbhatananda (B) Chattampi Swamikal
(C) Sree Narayana Guru (D) Ayyankali
91. The background of the novel 'The Kite Runner' took place in which country ?
- (A) Iraq (B) Sudan
(C) Syria (D) Afghanistan
92. Venue of the Samadhi of Sree Narayana Guru :
- (A) Sivagiri (B) Arunipuram
(C) Varkala (D) Alway

93. The Wagon tragedy was related to :
- (A) Quite India Movement (B) Non Co-operation Movement
(C) Malabar Rebellion (D) Khilafath Movement
94. Spiritual father of Indian National Movement :
- (A) Vivekananda (B) Rajaram Mohan Roy
(C) Dayananda Saraswathi (D) Ramaswami Naikkar
95. Which neighboring country sharing longest boundary with India?
- (A) China (B) Bangladesh
(C) Pakistan (D) Nepal
96. World Health Organization warns against new epidemic broke out at West Africa in 2014 :
- (A) AIDS (B) Dengue fever
(C) MERS (D) Ebola
97. The author of the Sree Budha Charitham :
- (A) Kalidasan (B) Cherusseri
(C) Kumaranasan (D) Changapuzha
98. The Period of 11th five year plan :
- (A) 2007-2012 (B) 2006-2011
(C) 2005-2010 (D) 2008-2013
99. Gandhiji entered Indian politics in connection with :
- (A) Rowlat Act agitation (B) Khilafath movement
(C) Non -Co operation movement (D) Lucknow-Pact
100. India govt plan to construct new corridor for high speed train with speed range 300-350 kmph. What is the present maximum speed of long distance train in India?
- (A) 100-120 kmph (B) 70-80 kmph
(C) 90-100 kmph (D) 80-90 kmph