

1. The forward biased voltage for silicon diode is about-
 (A) 1 V (B) 0.8 V (C) 0.7 V (D) 0.3 V
2. International ohm, a unit of resistance, is defined in terms of-
 (A) Column of mercury (B) Cube of carbon (C) Cube of copper (D) Cube of aluminium
3. How the cathode of a Zener diode is represented in its symbol?
 (A) A triangle (B) An arrow head (C) The letter 'Z' (D) The letter 'D'
4. One mega ohm resistance is equal to -
 (A) 100 k Ω (B) 1000 k Ω (C) 10000 k Ω (D) 100000 k Ω
5. If the capacitor of a single-phase motor is short-circuited, then the motor will-
 (A) Not start (B) Run in the same direction (C) Run at reduced speed (D) Run in reverse direction
6. If the frequency changes from 50 Hz to 100 Hz keeping voltage constant, the inductive reactance of coil connected to supply-
 (A) Remains same (B) Becomes half (C) Becomes doubled (D) Becomes 4 times
7. If the speed of an alternator is reduced by half, its generated EMF will be-
 (A) Doubled (B) Tripled (C) One-half (D) One-third
8. Which of the following device stores energy in the form of magnetic field?
 (A) Resistor (B) Capacitor (C) Inductor (D) Transistor
9. The capacity of a refrigeration unit is measured in-
 (A) Ton (B) eV (C) Decibel (D) RPM
10. Auto transformer is one which has-
 (A) Only one winding (B) Two windings (C) No windings (D) Three windings
11. The difference of potential between the two terminals of a cell in an open circuit is called the _____ of a cell.
 (A) EMF (B) Terminal voltage (C) Charge (D) Power
12. The three terminals of a bipolar transistor are-
 (A) Emitter, collector and base (B) Emitter, collector and gate (C) Collector, gate and base (D) Drain, emitter and base
13. The dummy coil in DC machines is used to-
 (A) Eliminate reactance voltage (B) Eliminate armature reaction (C) Bring about mechanical balance of armature (D) Eliminate harmonics developed in the machine
14. Electrolyte used in Edison cell is-
 (A) H₂SO₄ (B) HCl (C) KOH (D) KMnO₄
15. The number of slip rings in a squirrel cage induction motor is-
 (A) Zero (B) One (C) Two (D) Three
16. Brushes of DC machines are made of-
 (A) Carbon (B) Hard copper (C) Aluminium (D) Nichrome
17. Kirchhoff's voltage law (KVL) works on the principle of law of conservation of-
 (A) Charge (B) Energy (C) Mass (D) Flux
18. A 50 Hz, 3-phase induction motor has a full load speed of 1440 RPM. The number of poles in the motor is-
 (A) 2 (B) 4 (C) 6 (D) 8
19. The standard frequency of domestic AC mains supply voltage of 230 V in India is -
 (A) 25 Hz (B) 50 Hz (C) 100 Hz (D) 1000 Hz

20. The direction of rotation of conductor of a DC motor can be determined by-
 (A) Ampere's law (B) Fleming's left hand rule (C) Fleming's right hand rule (D) Lenz's law rule
21. The reciprocal of resistivity is-
 (A) Conductivity (B) Admittance (C) Impedance (D) Reactance
22. Filament lamps operates at _____ power factor.
 (A) Unity (B) 0.707 lead (C) 0.707 lag (D) 0.5 lead
23. During start-up of resistance-start motor, the centrifugal switch _____ until the motor speeds up.
 (A) Closes and connects the start winding only (B) Closes and connects the run winding only (C) Opens and disconnects the run winding (D) Opens and disconnects the start winding
24. The hum in a transformer is mainly attributed to-
 (A) Load changes (B) Oil in the transformer (C) Magnetostriction (D) Mechanical vibrations
25. Photodiodes can turn its current ON and OFF in-
 (A) Milliseconds (B) Microseconds (C) Seconds (D) Nanoseconds
26. The armature of DC generator is laminated to-
 (A) Reduce Hysteresis loss (B) Reduce eddy current loss (C) Provide air cooling passage (D) Reduce friction loss
27. The difference between the speed of the rotating stator field and rotor is termed as-
 (A) Slip (B) Pitch (C) Module (D) Range
28. An SCR has _____ PN junction.
 (A) 2 (B) 3 (C) 4 (D) 5
29. The scale of permanent magnet moving coil instrument is-
 (A) Uniform (B) Non-uniform (C) Cramped at the lower ends (D) Crowded in the middle
30. The function of breather in a transformer is-
 (A) To provide oxygen to the cooling oil (B) To provide cooling air to the winding (C) To arrest flow of moisture when outside air enters the transformers (D) To filter the transformer oil
31. An induction motor, in general, is analogous to-
 (A) An auto-transformer (B) A two-winding transformer with its secondary winding open-circuited (C) A two-winding transformer with its secondary winding short-circuited (D) A three-winding transformer
32. If two resistances of 3 and 2 ohms are connected in a series circuit and a 3 A current is flowing, what is its total voltage?
 (A) 15 V (B) 18 V (C) 8 V (D) 12 V
33. The filament of an incandescent lamp is made of-
 (A) Carbon (B) Nickel (C) Aluminium (D) Tungsten
34. Heating element of electric iron box is an alloy of-
 (A) Copper and nickel (B) Nickel and cobalt (C) Iron and magnesium (D) Nickel and chromium
35. If a wire has a resistance of 0.5 Ω , then its conductance will be-
 (A) 1.5 Siemens (B) 2 Siemens (C) 1 Siemens (D) 0.5 Siemens

36. The resistance of 200 W, 200 V lamp is -
 (A) 100 Ω (B) 200 Ω (C) 300 Ω (D) 400 Ω
37. For a frequency of 200 Hz, the time period will be-
 (A) 0.05 s (B) 0.005 s (C) 0.0005 s (D) 0.5 s
38. A CRT screen is coated with -
 (A) Sodium (B) Calcium (C) Phosphor (D) Aluminium oxide
39. The number of parallel paths in wave winding is-
 (A) 2 (B) 3 (C) 4 (D) 5
40. Clip-on type meter is also called-
 (A) Megger (B) Energy meter (C) Tachometer (D) Tong tester
41. The creeping error in single phase energy meter can be minimised by-
 (A) Adjusting braking magnet (B) Adjusting the shaded band (C) Use of short circuited loops on the outer limbs of the shunt magnet (D) Drilling two holes in the disc on the opposite side of the spindle
42. GLS lamp works on the basis of-
 (A) Heating effect (B) Chemical effect (C) Electrostatic effect (D) Magnetic effect
43. Interpoles are meant for-
 (A) Increasing the speed of the motor (B) Decreasing counter EMF (C) Reducing sparking at the commutator (D) Converting armature current to DC
44. The construction of synchronous motor is similar to-
 (A) DC compound motor (B) Slip ring induction motor (C) DC shunt generator (D) Alternator
45. In three-phase squirrel-cage induction motors, the rotor conductors are-
 (A) Kept open (B) Short-circuited through slip rings (C) Short-circuited through end rings (D) Connected to insulation
46. The line voltage in a three phase star-connected system is equal to ____ times its phase voltage.
 (A) 1.414 (B) 1.732 (C) 2.236 (D) 2
47. How many limbs are there in the core of a shell type transformer?
 (A) 5 (B) 4 (C) 3 (D) 2
48. The ratio of the RMS value to the average value of AC is called -
 (A) Crest factor (B) Form factor (C) Peak factor (D) Specific resistance
49. Inductance is measured in-
 (A) Henry (B) Farad (C) Ohm (D) Mho
50. The recommended creepage distance for insulators in heavily polluted areas are-
 (A) 16 mm/kV (B) 18 mm/kV (C) 20 mm/kV (D) 25 mm/kV
51. How should a galvanometer convert into an ammeter?
 (A) Resistance connected in parallel to it (B) Resistance connected in series with it (C) Capacitors connected in parallel to it (D) Capacitors connected in series with it
52. Megger is used to measure-
 (A) Insulation (B) Inductance (C) Voltage (D) Capacitance
53. Which component of fluorescent tube light is used to get voltage surge at starting?
 (A) Tube (B) Choke (C) Filament (D) Capacitor

54. What is the rate of flow of an electric charge?
 (A) Electric current (B) Electric potential (C) Electric resistance (D) Capacitance
55. According to Indian Standard Institution, fans, sockets and light shall be restricted to _____ in a sub-circuit.
 (A) 200 watts and 5 points (B) 300 watts and 5 points (C) 400 Watts and 6 points (D) 800 Watts and 10 points
56. How many coulombs of charge flow through a circuit carrying a current of 10 A in 1 minute?
 (A) 10 C (B) 60 C (C) 100 C (D) 600 C
57. Which of the following is a hard solder?
 (A) Lead – tin (B) Lead – silver – tin (C) Lead – silver (D) Copper – zinc
58. A parallel circuit is that it has-
 (A) All elements connected end to end (B) Same current flowing through all the elements (C) All elements connected across power supply (D) All elements placed side by side
59. Constantan contains-
 (A) Silver and tin (B) Copper and tungsten (C) Tungsten and silver (D) Copper and nickel
60. A capacitor consists of-
 (A) Two insulators separated by conductors (B) Two conductors separated by insulators (C) Two insulators only (D) Two conductors only
61. Alternators are rated in which of the following?
 (A) BHP (B) HP (C) kJh (D) kVA
62. In a electric iron, the transfer of heat from coil to base plate is mainly through-
 (A) Conduction (B) Convection (C) Radiation (D) Partial conduction and partial convection
63. Creeping is observed in-
 (A) Energy meter (B) Voltmeter (C) Ammeter (D) Hydrometer
64. In a transformer, sludging is principally due to-
 (A) Moisture present in oil (B) Dust particles present inside the tank (C) Oxidation of oil (D) Vaporization of oil
65. The tooth or slot harmonics in an induction motor is caused due to-
 (A) Variation of air gap reluctance (B) Leakage flux (C) Non sinusoidal nature of input voltage (D) Skewing in the rotor slots
66. Which of the following is an example of absolute instrument?
 (A) Voltmeter (B) Ammeter (C) Watt-hour meter (D) Tangent galvanometer
67. Which of the following devices convert AC power to DC power?
 (A) Alternator (B) Generator (C) Rectifier (D) Transformer
68. Which of the following types of insulator is employed to insulate the lower part of the guy wire from the pole for the safety of people?
 (A) Pin type insulator (B) Suspension type insulator (C) Egg or stay insulator (D) Shackle type insulator

69. Phase relationship between the applied voltage and the current flowing through the inductive circuit is-
- (A) Current leads the voltage (B) Voltage lags the current (C) Current lags the voltage (D) Current in phase with the voltage
70. The process by which impurities are added to a pure semiconductor is-
- (A) Diffusing (B) Doping (C) Drift (D) Mixing
71. The wire of 2 SWG is equivalent to diameter of-
- (A) 5.38 mm (B) 5.89 mm (C) 6.4 mm (D) 7.01 mm
72. How many layers does a thyristor have?
- (A) 2 (B) 3 (C) 4 (D) 5
73. Which of the following acts as a depolariser in a dry cell?
- (A) Carbon powder (B) Manganese dioxide (C) Ammonium chloride (D) Zinc chloride
74. Which of the following processes is used for joining two metals without the use of heat?
- (A) Soldering (B) Riveting (C) Brazing (D) Welding
75. In a shaded pole motor, shading coils are provided to-
- (A) Reduce winding losses (B) Reduce friction losses (C) Produce rotating magnetic field (D) Protect against sparking
76. The dark and bright lamp method is used for _____ in an alternator.
- (A) Load balance (B) Load transfer (C) Providing mechanical strength (D) Synchronization
77. Which of the following protects a cable against mechanical injury?
- (A) Bedding (B) Sheath (C) Armouring (D) Serving
78. At stand still condition of an induction motor, the value of slip is-
- (A) 0 (B) 0.25 (C) 0.5 (D) 1
79. Which of the following motor is used in the mixer?
- (A) Repulsion Motor (B) Reluctance Motor (C) Hysteresis Motor (D) Universal Motor
80. In circuit breakers, the arcing contacts are made of-
- (A) Porcelain (B) Copper tungsten alloy (C) Aluminium alloy (D) Electrolytic copper

GENERAL APTITUDE

81. Odisha shares its border with _____ Indian states.
 (A) Three (B) Four (C) Five (D) Six
82. How many districts are there in Odisha?
 (A) 28 (B) 30 (C) 32 (D) 33
83. Who was the first Governor of Odisha after independence of India?
 (A) M. Asaf Ali (B) Kailash Nath Katju (C) P. S. Kumaraswamy (D) Bhim Sen Sachar
 Raja
84. Simlipal National Park is located in which district of Odisha?
 (A) Nabarangpur (B) Mayurbhanj (C) Deogarh (D) Sundargarh
85. In which year was the state's name Orissa changed to Odisha?
 (A) 2009 (B) 2005 (C) 2011 (D) 2013
86. Who among the following was appointed the Chairman and Managing Director of the ITC Limited in May 2019?
 (A) Sanjiv Puri (B) Nakul Anand (C) Sumant Bhargavan (D) S. Sivakumar
87. Who won the Purple Cap for highest wickets in the IPL 2019?
 (A) Jasprit Bumrah (B) Rashid Khan (C) Deepak Chahar (D) Imran Tahir
88. Who won the men's singles title of 2019 Madrid Open tennis tournament?
 (A) Novak Djokovic (B) Roger Federer (C) Andre Agassi (D) Andy Murray
89. India's first global, Mega-Science Exhibition 'Vigyan Samagam' started at-
 (A) Jaipur (B) Kolkata (C) Mumbai (D) Chennai
90. The 52nd annual meeting of the Asian Development Bank's (ADB) board of governors was held in-
 (A) Germany (B) Fiji (C) India (D) Spain
91. If P and Q can do a job in 12 days and 9 days respectively, find the ratio of the work done by P and Q separately in 1 day.
 (A) 3 : 4 (B) 4 : 3 (C) 3 : 7 (D) 4 : 7
92. If 54 is divided into two parts such that the sum of 10 times the first part and 22 times the second part is 780, find the larger part.
 (A) 24 (B) 34 (C) 30 (D) 32
93. Evaluate: $617 + 6.017 + 0.617 + 6.0017$
 (A) 6.2963 (B) 62.965 (C) 629.6357 (D) 6296.357
94. After spending 30% of the money he earned, Vijay is left with ₹.3500. How much money did he earn?
 (A) ₹.12000 (B) ₹.15000 (C) ₹.5000 (D) ₹.4000

95. If the selling price of 50 articles is equal to the cost price of 40 articles, then find the loss or gain per cent.
(A) 20% loss (B) 20% gain (C) 25% loss (D) 25% gain
96. Choose the MISSPELT word.
(A) Pretentious (B) Objectionable (C) Persistent (D) Intimidate
97. Fill in the blank with the most appropriate word which will suit the context of the sentence. Kumar eventually accepted our rules with a certain _____.
(A) Reluctance (B) Disgust (C) Conscience (D) Shame
98. Choose the correct antonym of the given word from the options given below.
GENUINE
(A) Authentic (B) Original (C) Positive (D) Fake
99. Choose the correct synonym of the given word from the options given below.
PENITENCE
(A) Approval (B) Shamelessness (C) Happiness (D) Repentance
100. "The following sentence is divided into four parts (L, M, N and O). Rearrange it in the proper sequence in order to make a meaningful sentence.
(L) Basically his life was like a straight line
(M) Even though Gandhiji went through
(N) Becoming a mahatma
(O) Several turning points while
(A) OMNL (B) MONL (C) LONM (D) OLNM