

227/2015

Maximum : 100 marks

Time : 1 hour and 15 minutes

1. Which one of the materials of the atom contains only 4 free electrons?  
(A) Copper (B) Gold  
(C) Germanium (D) Mica
2. Which factor does not depend on the resistance of the conductor among the following factors?  
(A) Length (B) Material  
(C) Voltage (D) Temperature
3. Which material is having the negative temperature co-efficient among the following?  
(A) Copper (B) Aluminium  
(C) Tungsten (D) Carbon
4. The equivalent resistance of the parallel circuit is \_\_\_\_\_ than the smallest single resistance.  
(A) Greater (B) Smaller  
(C) Equal (D) Half
5. Size of the wires can be measured normally by standard wire gauge. Which instrument must be used for accurate measurement of wire size?  
(A) Verniercaliper (B) Depth gauge  
(C) Fuel gauge (D) Micrometer
6. What type of flux is suitable for electrician's solder?  
(A) Zinc chloride (B) Tallow  
(C) Hydrochloric acid (D) Resin
7. An industry has 100 nos of light points each 60W and 50 H.P. power load. The above light load used 6 hours per day and power load used 10 hours per day. What is the unit consumption per day?  
(A) 536 (B) 409  
(C) 475 (D) 309

8. What is the name of the instrument used to measure the specific gravity of a battery?
- (A) Pyrometer (B) Hydrometer  
(C) Lactometer (D) Fuel Gauge
9. Which type of winding is wound with many turns of thin wire in D.C generator?
- (A) Series field winding (B) Armature winding  
(C) Shunt field winding (D) Compensating winding
10. Which type of D.C. generator is used for welding generator set?
- (A) Cumulative compound generator (B) Shunt generator  
(C) Differential compound generator (D) Series Generator
11. What is the purpose of starter in D.C motor?
- (A) To maintain constant speed of the motor  
(B) To protect the motor from the faulty  
(C) To reduce the starting current and also protect the motor  
(D) To control the speed of the motor
12. Which method of speed control is used in D.C. series fan motor?
- (A) Field diverter method (B) Field tapping method  
(C) Series parallel method (D) Supply voltage control
13. Which type of joint is used in over head lines for extending the length of wire?
- (A) Rat tail Joint (B) Married joint  
(C) Western union joint (D) Arial Tap joint
14. What is the colour of the neutral wire in a single phase or 3 phase circuit?
- (A) Red (B) Black  
(C) Green (D) Blue
15. Which of the following place is used for the plate electrode earthing?
- (A) Building (B) Generating station  
(C) Computer room (D) Electrical Appliances

16. If the frequency is 50 Hertz. What is the time taken to complete one cycle?  
(A) 0.2 second (B) 0.02 second  
(C) 2 second (D) 0.002 second
17. All A.C. voltage and current are measured by meters. Which of the following value is indicated by measuring instruments?  
(A) Average value (B) Maximum value  
(C) R.M.S value (D) Peak value
18. A coil has an inductance of 0.1 Henry and it connected to the 230V, 50Hz. A.C supply. What is the value of inductive reactance?  
(A) 31.04 ohm (B) 23.04 ohm  
(C) 2300 ohm (D) 3.1 ohm
19. In a three phase system voltage across phase to phase is called :  
(A) EMF (B) Terminal Voltage  
(C) Phase voltage (D) Line Voltage
20. What is the relation between frequency, speed and number of poles in an alternator?  
(A)  $f=120/PN$  (B)  $f=N/120$   
(C)  $N=120/f$  (D)  $f=PN/120$
21. How many number of slip rings are required for a rotating field type 3 phase alternator?  
(A) 6 (B) 2  
(C) 3 (D) 8
22. What is the feature of salient pole rotor used in an alternator?  
(A) Smaller in length and larger in diameter  
(B) Smaller in diameter and larger in length  
(C) Smaller in diameter and smaller in length  
(D) Larger in diameter and larger in length
23. What is the working principle of two winding, transformer?  
(A) Self induction (B) Mutual induction  
(C) Principle of motor (D) Lenz's law

24. Which type of transformer winding has no ohmic resistance and no magnetic leakage resulting in no losses?
- (A) Distribution transformer (B) Power transformer  
(C) Ideal Transformer (D) Instrument transformer
25. Which of the following speed is called synchronous speed in a 3 phase induction motor?
- (A) Speed of the rotating magnetic field (B) Speed of the rotor  
(C) Speed of the flux produced in the rotor (D) Speed of the stator
26. When a 3 phase motor is stationary, the frequency of the rotor current is :
- (A) Same as supply frequency (B) Less than supply frequency  
(C) More than supply frequency (D) Zero frequency
27. A 3 phase induction motor takes a current of 120 A from 400 V, 50 Hz supply. Determine the power factor :
- (A) 0.82 (B) 0.8  
(C) 0.87 (D) 0.9
28. Which part of the magnetic over load relay is cause to lift the plunger in the upward direction?
- (A) Magnetic coil (B) Plunger  
(C) Relay contact lever (D) Insulated bracket
29. Which type of single phase motor is having wound rotor?
- (A) Split phase motor (B) Universal motor  
(C) Capacitor motor (D) Shaded pole motor
30. Which of the following motor does not have a winding or commutator or brush in its rotor?
- (A) Slip ring induction motor (B) Stepper motor  
(C) Universal motor (D) Induction motor
31. The size of the winding wires are specified in SWG numbers. The diameter of 36 SWG, SE copper wire is :
- (A) 0.19 mm (B) 1.9 mm  
(C) 0.019 mm (D) 19 mm

32. For a full pitch 3 phase winding, what will be the coil throw, if the coil pitch is 12?  
(A) 24 (B) 6  
(C) 10 (D) 12
33. The range of 1 milliampere meter is changed to a 10 mA meter. The moving coil of a meter have a resistance of 36 ohm. What is the value of resistance to be connected in parallel?  
(A) 4 ohm (B) 3 ohm  
(C) 10 ohm (D) 36 ohm
34. What is the name of the chemical used to get green colour light in neon sign lamp?  
(A) Cadmium borate (B) Cadmium silicate  
(C) Zinc silicate (D) Phosphor
35. Which is not the passive components from the following?  
(A) Resister (B) Capacitor  
(C) Transistor (D) Inductor
36. Which one of the following is the LDR's applications?  
(A) For switching operation (B) Used for voltage stabilization  
(C) Temperature measurement (D) For measuring the intensity of light
37. What is the barrier potential for silicon diode?  
(A) 0.3 V (B) 0.4 V  
(C) 0.6 V (D) 0.7 V
38. Which of the following value is appeared in the screen of the CRO, when measuring AC voltage?  
(A) R.M.S. value (B) Average value  
(C) Peak to peak value (D) Instantaneous value
39. What is the application of Triac?  
(A) It is used for triggering  
(B) It is used for controlling A.C. in either direction  
(C) It is used to square pulse  
(D) It is used as inverter, converting A.C to D.C

40. What is the abbreviation of PILC cable?  
 (A) Paper insulated length core (B) Polymer insulated lead core  
 (C) Paper insulated lead covered (D) Ploy insulated lead core
41. Trysquare is used to check up an angle of :  
 (A) 90° (B) 60°  
 (C) 30° (D) 15°
42. A revet is specified by the diameter of its :  
 (A) Tail (B) Head  
 (C) Shank (D) Flange
43. A cutting tool used to cut outside threads is called:  
 (A) Die (B) Tap  
 (C) Drill (D) File
44. The main functions of brake fluid is :  
 (A) Cooling of brake chamber (B) Lubrication  
 (C) Power transmission (D) None of these
45. The inner end of axle shaft is splined to the :  
 (A) Planet gear (B) Crown wheel  
 (C) Star gear (D) Sun gear
46. Piston rings are made up of :  
 (A) Cast iron (B) Brass  
 (C) Cobalt (D) Platinum
47. Formula of compression ratio is :  
 (A) IHP-BHP (B)  $2\pi NT/4500$   
 (C) Plan /4500 (D) Total volume/clearance volume
48. Which tool is used to enlarged large drilled holes?  
 (A) Twist drill (B) Boring tool  
 (C) Hand shear (D) Shaper

49. The S.I unit of pressure is :
- (A) Pascal (B) Jule  
(C) Newton (D) None of these
50. The pressure in an engine cylinder is less than the atmospheric pressure when the engine is working \_\_\_\_\_ stoke.
- (A) Suction (B) Compression  
(C) Exhaust (D) None of these
51. A fully charged lead acid battery has specific gravity of :
- (A) 1.609 (B) 2.10  
(C) 1.110 (D) 1.290
52. Why splined slip joint is attached to the propeller shaft?
- (A) Proper torque transmission (B) Proper lubrication  
(C) To accommodate change of length (D) None of these
53. The Ratio between B.H.P and I.H.P is called :
- (A) Thermal efficiency (B) Mechanical efficiency  
(C) Relative efficiency (D) None of these
54. In diesel engine fuel is ignited by :
- (A) Spark plug (B) Glow plug  
(C) Injector (D) Temperature of compressed air
55. Which of the following is not a part of engine exhaust system?
- (A) Valves (B) Air filter  
(C) Muffler (D) Tail pipe
56. Supercharger in an engine is also called :
- (A) Cleaning (B) Heating  
(C) Cooling (D) Boosting

57. Which one of the following suspension springs also acts as a means for locating the axle?
- (A) Leaf (B) Helical  
(C) Tortion bar (D) Rubber
58. Thermal efficiency of 2-stroke engine is \_\_\_\_\_ 4-stroke engine.
- (A) Less than (B) Greater than  
(C) Equal to (D) None of these
59. The device used to measure the clearance between the valve and tappet of I.C engine is :
- (A) Feeler gauge (B) Micro meter  
(C) Tappet gauge (D) None of these
60. If the compression ratio in I.C engine increases, then its thermal efficiency will :
- (A) Remain same (B) Increase  
(C) Decrease (D) No change
61. The heat transfer from coolant to air in the radiator of an automobile engine takes place by :
- (A) Convention (B) Radiation  
(C) Convention and radiation (D) Conduction
62. Combustion in C.I engine is :
- (A) Homogeneous (B) Laminar  
(C) Turbulent (D) Hetrogeneous
63. Petrol is distilled at a temperature in range of :
- (A) 20-40° (B) 70-220°  
(C) 240-360° (D) 360-400°
64. The valve overlap in 4-stroke petrol engine is approximately :
- (A) 130° (B) 90°  
(C) 20° (D) 2°
65. The power to weight ratio of diesel engine compared to petrol engine is :
- (A) Low (B) High  
(C) Same (D) None of these

66. The condenser is connected parallel with the :
- (A) Secondary winding (B) CB points  
(C) Ignition switch (D) None of these
67. The main cause for the change in engine oil viscosity is :
- (A) Humidity (B) Vaccume  
(C) Contamination (D) Temperature
68. The anti freeze solution commonly used in automobile is :
- (A) Iso-octane (B) Heptane  
(C) Glycol (D) DOT-3
69. The alternators are used in the vehicles to :
- (A) Battery charging (B) Measure the current  
(C) Measure voltage (D) Engine starting
70. Sheet metal work is carried out only on metal sheets, which are?
- (A) Cast (B) Forged  
(C) Rolled (D) None of these
71. TPS sensor means that :
- (A) Temperature point sensor (B) Top dead centre point sensor  
(C) Throttle position sensor (D) None of these
72. Oil level is checked by :
- (A) Dip stick (B) Scoop  
(C) Oil pressure gauge (D) All of the above
73. In d.c generator magnetic field is produced in the :
- (A) Armature (B) Commutator  
(C) Carbun brushes (D) Stator
74. During idling a petrol engines required to :
- (A) Lean mixture (B) Rich mixture  
(C) Variable mixture (D) Stoichiometric mixture

75. Dog clutches are used in :  
(A) Brakes (B) Friction clutches  
(C) Starter (D) Gear boxes
76. The type of gear box, which uses friction cones to equalize speeds of the members prior to gear engagement is :  
(A) Sliding mesh (B) Constant mesh  
(C) Crash type (D) Synchro mesh
77. In semi floating type axle, the vehicle load is taken by :  
(A) Axle housing (B) Axle shaft  
(C) Axle hub (D) Bearing
78. Volatility is the ability of the fuel to :  
(A) Combustion (B) Fire  
(C) Evaporate (D) All of the above
79. E.G.R valve is employed in automobile is controlling emission of :  
(A) HC (B) CO  
(C) Nox (D) HC and CO
80. An over inflated tyre will wear the tread most :  
(A) Edges (B) Side wall  
(C) Centre (D) Out sides
81. The river Brahmaputhra originates from :  
(A) Western ghats (B) Himalaya  
(C) Eastern ghats (D) Vindhya mountains
82. The holy place Kasi situated in the banks of river :  
(A) Brahmaputhra (B) Ganges  
(C) Yamuna (D) Godavari
83. How many west flowing rivers in Kerala?  
(A) 44 (B) 43  
(C) 41 (D) 40

84. Indian National Congress was formed in :
- (A) 1885 (B) 1865  
(C) 1875 (D) 1905
85. A revolutionary organisation, Bharath Matha Society was founded by :
- (A) V.D. Savarkar (B) J.M Chatterjee  
(C) Hardayal (D) AurobindoGhosh
86. AITUC was formed in :
- (A) 1926 (B) 1930  
(C) 1948 (D) 1920
87. Swaraj party was formed by :
- (A) S.N. Banerjee (B) C.R. Das  
(C) Juthindas (D) W.C. Banerjee
88. Planning Commission was setup in India in :
- (A) 1948 (B) 1949  
(C) 1950 (D) 1951
89. "Give me blood inturn I will give you freedom". Whose declaration was this?
- (A) Bhagathsingh (B) Gandhiji  
(C) Jayaprakash Narayan (D) Subhash Chandra Bose
90. Servants of India Society was founded by :
- (A) B.G Tilak (B) Gopala Krishna Gokhale  
(C) S.N. Banerjee (D) Annie Bessant
91. Who is known as the father of modern Kerala renaissance?
- (A) E.M.S. Namboothiripadu (B) Chattambi Swamikal  
(C) SreeNarayana Guru (D) Mannathu Padmanabhan
92. The SNDP came in to existence in :
- (A) 1903 (B) 1906  
(C) 1907 (D) 1905

93. Who was the founder of Sidhasramam at Alathur?  
(A) Thycaud Ayya (B) Chattampi Swamikal  
(C) Brahmanada Sivayogi (D) SreenarayanaGuru
94. A famous social reformer who born at Kottayam in north Kerala was :  
(A) Brahmananda Sivayogi (B) Sahodaran Ayyappan  
(C) Vagbhadananda (D) Vaikunda Swamikal
95. First secretary of Nayar Service Society :  
(A) Mathathu Padmanabhan (B) K. Kelappan  
(C) K. Madhavan Nayar (D) A.K. Gopalan
96. Mission Indra Dhanus of Union Govt. is related to :  
(A) Training in Archery  
(B) Military Training  
(C) Immunisation of children against 7 diseases  
(D) Cinema
97. Which of the following person didn't get Magsaysay award?  
(A) Kailas sathyarathi (B) Rajendra Singh  
(C) Aruna Roy (D) R.K. Laxman
98. Curiosity Rover to study Mars has been launched by :  
(A) China (B) Britain  
(C) Russia (D) USA
99. The national science day is celebrated on :  
(A) 28 February (B) 14 March  
(C) 18 January (D) 15 December
100. Who won the Dadasaheb Phalke Award in 2014?  
(A) K. Balachander (B) Soumithra Chatterjee  
(C) Raj Kapoor (D) Sashi Kapoor