231/2015

Maximum : 100 marks

Time : 1 hour and 15 minutes

1. What is the form factor of pure sine wave?
   (A) 0.11
   (B) 1.01
   (C) 1.00
   (D) 1.11

2. Chisels are made of :
   (A) High carbon steel
   (B) High speed steel
   (C) Cast steel
   (D) Tungsten steel

3. A magnifying glass is used :
   (A) During filling operation
   (B) While taking precision measurements
   (C) During chipping operation
   (D) During cutting operation

4. A delayed-action cartridge fuse is used for :
   (A) Motor circuits
   (B) Lighting circuits
   (C) Heating circuits
   (D) None of these

5. The effect of smoke, acid and alkali is negligible on :
   (A) TRS wire
   (B) VIR wire
   (C) Lead sheathed wire
   (D) Flexible wire

6. The inner tube of a HPMV lamp is filled with :
   (A) Argon gas
   (B) Halogen gas
   (C) Helium gas
   (D) Nitrogen gas

7. Totnl electrical degrees for a 4 pole AC machine is equal to :
   (A) 180°
   (B) 360°
   (C) 720°
   (D) 1080°

8. Which element is used as semiconductor material?

(A) Copper
(B) Plastic
(C) Silicon
(D) Tungsten

9. Highest dopped region in a transistor is :

(A) Emitter
(B) Base
(C) Collector
(D) All equally

10. Energy radiated continuously in the form of light-waves is called :

(A) Lumen
(B) Illumination
(C) Luminous intensity
(D) Luminous – flux

11. What is the working temperature of a thoriated tungsten filament?

(A) 1600 °C
(B) 1700 °C
(C) 1800 °C
(D) 2000 °C

12. Impurities in an electrolyte can cause an internal short-circuit condition called :

(A) Electrolysis
(B) Depolarization
(C) Polarization
(D) Local action

13. Permanent magnets are normally made of :

(A) Aluminium
(B) Wrought iron
(C) Cast iron
(D) Alnico alloys

14. Induction instruments have found widest application as :

(A) Watt hour meter
(B) Frequency meter
(C) Voltmeter
(D) Ammeter

15. The power factor of an ordinary electric bulb is :

(A) Zero
(B) Unity
(C) Lagging
(D) Leading

16. Function of a relay is :

(A) Fault detection
(B) Energize the tripping circuit
(C) Both (A) and (B)
(D) None of the above

17. The electrolyte of lead acid battery is :

(A) H_2SO_4 (B) $PbSO_4$

(C) H_2O (D) KOH

18. In an AC circuit, the ratio of KW/KVA represents :

(A) Load power factor (B) Form factor

(C) Power factor (D) Diversity factor

19. The ratio of average load to the maximum demand during a given period is known as :

(A) Average factor (B) Demand factor

(C) Load factor (D) Power factor

20. The capacitance of a transmission line is a :

(A) Series element (B) Shunt element

(C) Either (A) or (B) (D) None of these

21. If the diameter of conductor decreases, inductance of the line is :

(A) Increased (B) Decreased

(C) Not affected (D) None of these

22. If the power factor of the load decreases, the line losses :

(A) Not changed (B) Decreased

(C) Increased (D) Either (B) or (C)

23. Under operating conditions, the maximum stress in a cable is at :

(A) Centre of conductor (B) End of conductor

(C) Same (D) Conductor surface

24. In practice, tap-changing is performed on load so that there is ———— to supply.

(A) Interrupted (B) No interruption

(C) Either (A) or (B) (D) None of these

25. The principle cause of voltage variation in system is depend on :

(A) Power factor (B) Frequency

(C) Size of conductor (D) Load

26. Forced – blast circuit breakers have ———— speed of circuit interruption.

(A) Low (B) Medium

(C) High (D) Very high

27. The time current characteristics of a fuse has :

(A) Direct (B) Inverse

(C) Linear (D) None of these

28. The melting point of fuse element should have :

(A) Low (B) Medium

(C) High (D) Very High

29. Capacitive current breaking results in :

(A) Current surges (B) Harmonics

(C) Arcing (D) Voltage surges

30. The voltage build-up process of a dc generator is :

(A) Difficult (B) Delayed

(C) Infinite (D) Cumulative

31. The voltage regulation of an over compound dc generator is always :

(A) Negative (B) Positive

(C) Zero (D) High

32. The normal value of the armature resistance of a dc motor is :

(A) 0.005 (B) 0.5

(C) 10 (D) 100

33. A dc motor develops a torque of 200 N-m at 25 rps. At 20 rps it will develop a torque of ———— N-m.

(A) 128 (B) 160

(C) 200 (D) 250

34. The speed of dc motor is inversely its :

(A) Flux (B) Voltage

(C) Frequency (D) Pole

35. Which test for using to find stray losses on dc shunt motor?

(A) Hopkinson's
(B) Swinburne's
(C) Field's
(D) Retardation

36. A transformer has negative voltage regulation when its load power factor is :

(A) Zero
(B) Leading
(C) Unity
(D) Lagging

37. A T-T transformer cannot be paralleled with ———— transformer.

(A) V – V
(B) Y – Δ
(C) Y – Y
(D) Δ – Δ

38. The rpm of turbo alternator has :

(A) Low
(B) Medium
(C) High
(D) Any of these

39. The efficiency of a 3-phase induction motor is approximately proportional to :

(A) S
(B) N
(C) N_s
(D) (1 – S)

40. To change the DOR of repulsion motor is :

(A) To shift brush position
(B) To interchange phase and neutral
(C) To varying frequency
(D) All of the above

41. In dual cycle the heat is added at :

(A) Constant temperature and pressure
(B) Constant pressure and constant volume
(C) Constant pressure and constant temperature
(D) Constant pressure and adiabatic

42. The pipes connected with F.I.P and injector is made of :

(A) Copper
(B) Aluminium
(C) Steel
(D) Braided P.V.C.

43. Catalytic converter is fitted in between :

(A) Inlet manifold and fuel pump
(B) Exhaust manifold and port
(C) Inlet manifold and crank case
(D) Exhaust manifold and silencer

44. In maintenance free battery the plate grids are made of :

(A) Lead and calcium
(B) Lead and antimony
(C) Lead and arsenic
(D) Lead and beryllium

45. Cylinder liners are made of :

(A) Alloy steel
(B) Cast iron
(C) Forged steel
(D) Gun metal

46. Outward tilting of the front wheel at top in vertical line :

(A) Negative camber
(B) Positive caster
(C) King pin inclination
(D) Positive camber

47. In torsion bar suspension the road shock absorbed the torsion bar by :

(A) Compression
(B) Tension
(C) Twisting
(D) Deflection

48. The straightness of a cam shaft can be checked by :

(A) Straight edge
(B) Steel rule
(C) Dial gauge
(D) Bevel gauge

49. De-dion axles are used in :

(A) Rear live axle with independent suspension
(B) Rear dead axle with rigid axle suspension
(C) Front live axle with independent suspension
(D) Front dead axle with rigid axle suspension

50. The valves contain in the pressure cap of radiator is :

(A) Vacuum and pressure valves
(B) Atmospheric and vacuum valve
(C) Blow of valve
(D) Thermostat valve

51. If the unsprung weight is kept maximum, causes:

(A) Uncomfortable ride
(B) Better stability
(C) Comfortable ride
(D) Reduce side thrust

52. The energy produced by the engine is loss through the exhaust gas is :

(A) 10%
(B) 30%
(C) 25%
(D) 35%

53. Thermostat is located in between :

(A) Water pump and collector tank
(B) Cylinder head and header tank
(C) Water pump and header tank
(D) Water pump and water jacket

54. Knocking tendency in S.I. engine can be reduced by :

(A) Increasing compression ratio
(B) Increasing wall temperature
(C) Decreasing engine speed
(D) Increasing engine speed

55. Most commonly used lubricants are made from :

(A) Animal oil
(B) Vegetable oil
(C) Mineral oil
(D) Synthetic material

56. Unit of kinematic viscosity is :

(A) Centi stock
(B) Centi poise
(C) Milli stock
(D) Milli poise

57. The ratio speed of cam shaft and skew gear of oil pump is :

(A) 2 : 1
(B) 3 : 1
(C) 1 : 1
(D) 1 : 2

58. One Newton is equal to :

(A) 10^8 dyne
(B) 10^7 erg
(C) 10^5 erg
(D) 10^5 dyne

59. The rolling tendency of the vehicle can be reduced by :

(A) Panhard rod
(B) Stabilizer rod
(C) Radius rod
(D) Bell crank

60. The centrifugal advance mechanism in the distributor is works in relation to :

(A) Engine speed
(B) Engine load
(C) Engine torque
(D) Engine power

61. The energy conversion during brake application :

(A) Mechanical energy to kinetic energy
(B) Kinetic energy to heat energy
(C) Heat energy to mechanical energy
(D) Kinetic energy to mechanical energy

62. Clutch facings are made of :

(A) Asbestos
(B) Steel
(C) Leather
(D) Fabric

63. In disphragm clutch the wear of the clutch lining causes the clutch pedal to :

(A) Spongy
(B) Pulsation
(C) Hard
(D) Normal

64. The ratio of side force sustained and slip angle is called :

(A) Self righting torque
(B) Caster trail
(C) Cornering force
(D) Cornering power

65. While driving through a curved road the driver has to steer the vehicle more than it theoretically required this condition is called :

(A) Over steer
(B) Under steer
(C) Neutral steer
(D) None of these

66. The approximate pressure in the power steer system is :

(A) 3 Kpa
(B) 3 Mpa
(C) 7 Mpa
(D) 30 Kpa

67. The aspect ratio of the tyre is the ratio of :

(A) Tyre section width/Tyre section height
(B) Tyre section height/Tyre section width
(C) Strength of ply/No of ply
(D) Rim size/Tyre size

68. The excessive positive camber on wheel causes the tyre to wear :

(A) More at center
(B) More at outer edge
(C) More at inner edge
(D) More at sidewall

69. The cone clutches are used in :

(A) Sliding mesh gear box
(B) Constant mesh gear box
(C) Epicyclic gear box
(D) Synchro mesh gear box

70. Which type of the tyre gives riding comfort at slow speed?

(A) Cross ply
(B) Radial ply
(C) Solid tyre
(D) (B) and (C)

71. Which are the valves included in combination valves in hydraulic brake system?

(A) Proportionating – Pressure differential – Brake valve
(B) Proportionating – Metering – Brake valve
(C) Proportionating – Metering – Pressure differential valves
(D) Protection valve – Brake valve – Vacuum release valve

72. Minimum age for securing an Indian union driving license with authorization to drive transport vehicle :

(A) 21 yrs
(B) 18 yrs
(C) 16 yrs
(D) 20 yrs

73. Which tool is used to give uniform tightness in a bolt or stud?

(A) Ring spanner
(B) Ratchet spanner
(C) Torque wrench
(D) Allen wrench

74. What are the regulators are not necessary in charging system used with alternator?

(A) Current regulator and voltage regulator
(B) Speed regulator and voltage regulator
(C) Voltage regulator and cut out
(D) Current regulator and cut out

75. The head lamp reflectors are made :

(A) Spherical shape
(B) Flat shape
(C) Hyperbolic shape
(D) Parabolic shape

76. Who introduced first wind screen wiper in motor vehicle?

(A) Willys knight
(B) W.W. Burton
(C) Diamler benz
(D) Camille jenatzy

77. Sludge is formed when the oil is mixed with :

(A) Water
(B) Fuel
(C) Ethyl
(D) Exhaust gas

78. A.B.S. stands for :

(A) Auxiliary Brake System
(B) Anti lock Brake System
(C) Air Bag System
(D) Air Brake System

79. Which gas is inflated in the air bag during collision?

(A) Oxygen
(B) Carbon di oxide
(C) Hydrogen
(D) Nitrogen

80. Super charging in S.I. engine the possibility of detonation is :

(A) Decreases
(B) Increases
(C) Same
(D) None of these

81. The land surrounded by sea on three sides is called :

(A) Peninsula
(B) Coast
(C) Island
(D) Straits

82. Which planet is known as Red Planet?

(A) Saturn
(B) Mercury
(C) Sun
(D) Mars

83. The twin of Narmada river :

(A) Luni
(B) Tapi
(C) Mahi
(D) Sabarmati

84. Latitude and Altitude determines which climatic elements of a place :

(A) Pressure and Wind system
(B) Temperature
(C) Rain fall pattern
(D) All the above

85. Which of the latitudes passes through the middle of our country?

(A) Tropic of capricon
(B) Tropic of cancer
(C) Equator
(D) 82° 30 N

86. Which prevents the southwest monsoon winds from escaping from India?

(A) Seas
(B) Low pressure over Central Asia
(C) Himalayas
(D) The Great Indian Desert

87. National Bank for Agriculture and Rural Development was established in :

(A) 1982
(B) 1983
(C) 1984
(D) 1985

88. NOAPS – poverty alleviation scheme benefits which section of people :

(A) Children
(B) Women
(C) Old people
(D) All the above

89. The only state in India that shows an excess of females over males is :

(A) Kerala
(B) Punjab
(C) West Bengal
(D) Assam

90. Ranapratap Sagar dam is located in :

(A) Orissa
(B) Rajasthan
(C) Punjab
(D) Maharashtra

91. The first organised agitation against orthodoxy in Kerala, for the rights of the depressed classes :

(A) Guruvayur Sathyagraha
(B) Mappila outbreak
(C) Vaikkom Sathyagraha
(D) None of the above

92. Who published Vivekodayam?

(A) Brahmananda Sivayogi
(B) Narayana Guru
(C) Sahodaran Ayyappan
(D) Kumaranashan

93. One important work of Chavaraachan :

(A) Atmanuthapam
(B) Udyannavirunnu
(C) Atmavidhya
(D) Sathyarthaprakashika

94. Saivaprakasika sabha started by :

(A) Narayana Guru
(B) Dr. Palpu
(C) Thycaud Ayya
(D) Chattampi Swamikkal

95. Which leader was arrested during the time of Swati Tirunal Maharaja for his progressive ideas?

(A) Narayana Guru
(B) Vaikunda Swamikal
(C) Dr. Palpu
(D) Vaikkom Maulavi

96. For the outstanding services to his community he was nominated by the Travancore Government as a member of the Sree Moolam Praja Sabha :

(A) Kumaranashan
(B) Vaikkom Maulavi
(C) Sahodaran Ayyappan
(D) Ayyankali

97. Who among the following resigned from the membership of the Viceroys Executive Council as a protest against Jallian Walla Bagh massacre?

(A) M.A. Jinnah
(B) Nehru
(C) Ramaswami Naiker
(D) C. Sankaran Nair

98. During the company rule the Widow Remarriage Act was drafted by :

(A) Lord Dalhousie
(B) Lord Canning
(C) Lord Clive
(D) Lord Curzon

99. Number of east flowing rivers in Kerala :

(A) 4
(B) 3
(C) 5
(D) 6

100. Oldest sports in the world :

(A) Football
(B) Cricket
(C) Archery
(D) Tennis