

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. Total 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 diaphragm 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