

Section-I

GROUP – “B”

1. For a cantilever beam with uniformly varying load, shape of bending moment curve is
a. parabolic b. hyperbolic c. straight line d. cubic.
2. For 1st order lever, mechanical advantage is
a. <1 b. >1 c. =1 d. none
3. The negative resistance characteristic is exhibited by
a. Diode b. Triode c. Tetrode d. Pentode
4. Thermal efficiency of IC engines will be
a. 20-25% b. 30-35% c. 60-75% d. 45-55%.
5. When a mass is supported by a spring of constant k, which is cut in 4 equal pieces and connected in parallel way, the equivalent spring constant is
a) k/4 b) 16k c) 64k d) 0.4k.
6. Mass production of bolts and rivets is by
a. hot extrusion b. forging c. cold heading d. cold peening
7. Mercury doesn't stick to glass tube because
a. cohesive force > adhesive force b. cohesive force < adhesive force
c. cohesive force = adhesive force d. none of the above
8. Euler's formula is used for column of length
a. >80 b. <80 c. >90 d. >110
9. If a body weighing 40 kg floats in water with 40% of volume immersed, the sp. gravity of the body is
a. 1 b. 0.16 c. 0.25 d. none
10. If center distance of an involutes mating gear changes then the pressure angle
a. increases b. decreases c. remains unaltered d. neither of them
11. Normalising is
a. heated above critical temp and cooled in air
b. heated above critical temp and quenched in oil
c. heated below critical temp and cooled in air
d. none of these.
12. The best suited material for permanent magnet is
a. Alnico b. silicon c. copper d. mild steel
13. Hooke's joint is used for
a. parallel and intersecting shafts b. non-parallel non-intersecting
c. non-parallel and intersecting d. parallel and non-intersecting
14. Which of the following is a loose running fit?
a. h6/f6 b. h6/e6 c. h6/d6 d. none of these
15. Specific speed in a turbo machine depends on
a. geometric shape b. size c. head d. all of these
16. Unit of surface roughness is
a. micron b. PPM c. mm² d. meter
17. Mohr's circle is used to find
a. principle stress b. resultant of ANS c. principal strain d. none
18. Which one in the following has less carbon content?
a. tool steel b. spring steel c. carburising steel d. forging steel
19. Spheroidising is a process of
a. annealing b. normalising c. tempering d. case hardening
20. What type of thread is used in lead screw of a lathe
a. acme thread b. V c. square d. buttress
21. Wear allowance of a go nogo end plug gauge is given for
a. go end b. nogo end c. both d. none
22. Herring bone gears are used when it is required that a/an
a. axial thrust is transmitted b. radial thrust is transmitted
c. torque is transmitted. d. None of the above
23. In ball bearings, cage is used to
a. maintain the ball position b) maintain parallelism between inner and outer race
c. both d. none
24. Distance of ozone layer from surface of earth
a. 0 to 100 km b. 20 to 50 km c. 50 to 100 km d. 10 to 15 km
25. An elevator is moving up with an acceleration of 4.9 m/sec² with a body weighing 15 kg is attached with spring balance. What is the value in the spring balance?
a. 10 b. 15 c. 20 d. 30
26. At same heat input and max pressure
a. efficiency of Otto cycle is more than diesel b. efficiency of dual cycle is more than diesel
c. efficiency of diesel cycle is more than Otto d. all the above
27. Bending stress is (if y is the distance from the neutral axis)
a. inversely proportional to y b. proportional to y
c. independent of y d. none of the above
28. Which of the following is a wrong statement?
a. Plaster of Paris is made from dolomite, bauxite and limestone.
b. Highest temperature is represented by red colour.
c. In ball bearing, grease lubrication acts as boundary layer lubrication.
d. Diesel is always the most efficient fuel for automobiles.
29. Fahrenheit and centigrade are equal at
a. -40 b. 0 c. 32 d. 100
30. Melting point of ice changes with
a. increase with pressure b. increase with pressure ratio c. Both d. none