MECHANICS OF SOLIDS

1) Modulus of rigidity is given by the ratio of :
   (A) Tensile stress to Tensile strain
   (B) Shear stress to Shear strain
   (C) Stress to Strain
   (D) Compressive stress to Compressive strain
2) A simply supported beam of length l and carrying a uniformly distributed load w' over the entire length, then the maximum Bending moment is :
   (A) wl /4
   (B) $wl^2/8$
   (C) wl/2
   (D) $wl^2/16$
3) The materials which exhibit the same elastic properties in all direction are called :
   (A) Inelastic
   (B) Homogeneous
   (C) Isotropic
   (D) Isentropic
4) The bending moment diagram for a cantilever beam carrying point load at the free end will be a :
   (A) Parabola
   (B) Rectangle
   (C) Triangle
   (D) Cubic parabola
5) A diagram which represents the variation of axial load along the length of simply supported beam :
   (A) Bending moment diagram
   (B) Shear force diagram
   (C) Stress diagram

(D) Thrust diagram

6) For a simply supported beam with a central load, the bending moment will be :
   (A) Least the Centre
   (B) Least at the supports
   (C) Maximum at the supports
   (D) Maximum at the Centre

7) Every material obeys the Hook's law within its
   (A) Elastic limit
   (B) Plastic limit
   (C) Limit of proportionality
   (D) None of the above

8) The bending moment on a section maximum where shear force
   (A) Is maximum
   (B) Is minimum
   (C) Is equal
   (D) Changes sign

9) The moment diagram for a cantilever which is subjected to a uniformly distributed load will be a
   (A) Triangle
   (B) Rectangle
   (C) Parabola
   (D) Cubic parabola

10) Along the neutral axis of a simply supported beam
   (A) Fibres do not undergo strain
   (B) Fibres undergo minimum strain
   (C) Fibres undergo maximum strain
   (D) None of the above

11) When equal and opposite forces applied to a body, tend to elongate it, the stress so produced is called

(A) Shear stress

(B) Compressive stress

(C) Tensile stress

(D) Transverse stress

12) The property by which a body returns to its orginal shape after removal of the force is called

(A) Plasticity

(B) Elasticity

(C) Ductility

(D) Malleability

13) For simply supported beam with a central load the bending moment is

(A) Least at the centre

(B) Maximum at support

(C) Maximum at the centre

(D) None of the above

14) The bending moment at the free end of a cantilever beam carrying any type of load is

(A) Minimum

(B) Maximum

(C) Zero

(D) Equal to the load

15) The ratio of lateral strain to linear strain is

(A) Poisson's ratio

(B) Modulus of rigidity

(C) Modulus of elasticity

(D) Bulk modulus

16) In a simply supported beam ,shear force is zero where bending moment is

(A) Minimum

(B) Zero

(C) Maximum

(D) None of these

17) In case of cantilever beam, maximum bending moment occurs at

(A) Fixed end

(B) Free end

(C) Middle

(D) Both fixed and free end

18) The type of stresses set up in a rotating shaft due to torsion are

(A) Shear

(B) Compressive

(C) Bending

(D) All the above

19) Two closed thin vessels , one cylindrical and other spherical with equal internal diameter and wall thickness are subjected to equal internal fluid pressure . The ratio of hoop stress in the cylindrical to that in spherical vessel is :

(A) 0.5

(B) 1.0

(C) 2.0

(D) 4.0

20) A beam fixed at the ends and subjected to lateral loads only , is statically indeterminate and degree of indeterminacy is :

(A) One

(B) Two

(C) Three

(D) Four