

- A) Extreme fibres
C) Neutral axis
- B) Modulus of section
D) Along the cross-sectional area
- (XII) Determine the Poissons ratio and bulk modulus of a material, for which Youngs modulus is 1.2 and modulus of rigidity is 4.8.
A) 7
C) 9
- B) 8
D) 10
- (XIII) Find the strain of a brass rod of length 250mm which is subjected to a tensile load of 50kN when the extension of rod is equal to 0.3mm?
A) 0.025
C) 0.0046
- B) 0.0012
D) 0.0014
- (XIV) U.D.L stands for?
A) Uniformly diluted length
C) Uniaxial distributed load
- B) Uniformly developed loads
D) Uniformly distributed loads
- (XV) Shear force is diagram is _____ representation of shear force plotted as ordinate
A) Scalar
C) Graphical
- B) Aerial
D) Statically
- (XVI) If forces P, P and P of a system are such that the force polygon does not close, then the system will _____
A) Be in equilibrium
C) Reduce to a couple
- B) Reduce to a resultant force
D) Not be in equilibrium
- (XVII) In cantilever beams, the slope is _____ at fixed end.
A) Maximum
C) Minimum
- B) Zero
D) Uniform
- (XVIII) Hinged supports offers vertical and _____ reaction.
A) Horizontal
C) Rotation
- B) Moment
D) Couple
- (XIX) A member which does not regain its original shape after removal of the load producing deformation is said _____
A) Plastic
C) Rigid
- B) Elastic
D) None of the mentioned
- (XX) _____ of column mainly depends upon end conditions.
A) Radius of gyration
C) Factored load
- B) Slenderness ratio
D) Effective length
- (XXI) Curvature of the beam is _____ to bending moment.
A) Equal
C) Inversely proportion
- B) Directly proportion
D) Coincides
- (XXII) For circular section, the maximum shear stress is equal to _____ times of average shear stress.
A) 2/3.
C) 4/3.
- B) 3/2.
D) 3/4.
- (XXIII) In SFD, vertical lines are for _____
A) Point loads
C) UVL
- B) UDL
D) LDP
- (XXIV) _____ support develops support moment.
A) Hinged
C) Fixed
- B) Simple
D) Joint
- (XXV) What is the moment of inertia of a triangular section about an axis passing through C.G. and parallel to the base?
A) $\frac{bh^3}{12}$
C) $\frac{bh^3}{36}$
- B) $\frac{bh^3}{24}$
D) $\frac{bh^3}{6}$
- (XXVI) The materials which have the same elastic properties in all directions are called _____
A) Isotropic
C) Homogenous
- B) Brittle
D) Hard
- (XXVII) A bar of cross-section A and length L is subjected to an axial load W. the strain energy stored in the bar would be _____

- A) Refraction curve
C) Deflection curve
- B) Reflection curve
D) Random curve

(XLIII) Calculate the modulus of section of rectangle beam of size 240 mm × 400 mm.

- A) $5.4 \times 10^6 \text{ mm}^3$
C) $5.5 \times 10^6 \text{ mm}^3$
- B) $6.2 \times 10^6 \text{ mm}^3$
D) $6.4 \times 10^6 \text{ mm}^3$

(XLIV) A simple support offers only _____ reaction normal to the axis of the beam.

- A) Horizontal
C) Inclined
- B) Vertical
D) Moment

(XLV) The property by which a body returns to its original shape after removal of the force is called _____

- A) Plasticity
C) Ductility
- B) Elasticity
D) Malleability

(XLVI) What is the ratio of Young's modulus E to shear modulus G in terms of Poisson's ratio?

- A) $2(1 + \mu)$
C) $1/2 (1 - \mu)$
- B) $2(1 - \mu)$
D) $1/2 (1 + \mu)$

(XLVII) What is the moment of inertia of a circular section?

- A) $\pi D^4/64$
C) $\pi D^3/64$
- B) $\pi D^3/32$
D) $\pi D^4/32$

(XLVIII) A simply supported beam of span 1 m carries a point load "w" in centre determine the shear force in the half left of the beam.

- A) W/3
C) W/2
- B) W/4
D) W

(XLIX) Continuous beams are _____

- A) Statically determinate beams
C) Statically gravity beams
- B) Statically indeterminate beams
D) Framed beams

(L) Shear force is unbalanced _____ to the left or right of the section.

- A) Horizontal force
C) Inclined force
- B) Vertical force
D) Conditional force

(LI) What is MOI?

- A) ml^2
C) ar^2
- B) mal
D) None of the mentioned

(LII) The dimension of strain is?

- A) LT^{-2}
C) N
- B) N/m^2
D) Dimensionless

(LIII) The axis about which moment of area is taken is known as _____

- A) Axis of area
C) Axis of reference
- B) Axis of moment
D) Axis of rotation

(LIV) For _____ columns, the slenderness ratio is more than 32 and less than 120.

- A) Long
C) Average
- B) Short
D) Medium

(LV) The maximum shear stress is _____ times the average shear stress [For rectangular beams].

- A) 2.5
C) 1.2
- B) 3
D) 1.5

(LVI) What kind of elastic materials are derived from a strain energy density function?

- A) Cauchy elastic materials
C) Hyper elastic materials
- B) Cauchy elastic materials
D) None of the mentioned

(LVII) At hinge, the moments will be _____

- A) Maximum
C) Uniform
- B) Minimum
D) Zero

(LVIII) Elastic limit is the point _____

A) up to which stress is proportional to strain

B) At which elongation takes place without application of additional load

C) Up to which if the load is removed, original volume and shapes are regained

D) None of the mentioned

(LIX) Long columns fail due to _____

A) Direct stress

B) Buckling stress

C) Lateral stress

D) Tensile stress

(LX) Some structural members subjected to a long time sustained loads deform progressively with time especially at elevated temperatures. What is such a phenomenon called?

A) Fatigue

B) Creep

C) Creep relaxation

D) Fracture