Q:) The ratio of average shear stress to maximum shear stress in a prismatic beam of recangular cross section is:

A : 3/4

B : 4/3

C : 3/2

D : 2/3

Q:) which one of the following is kem diameter of a circular column of diameter, d?

A : d/2

B : d/4

C : d/6

D : d/8

Q:) What is the ratio of peak deflection of simply supported beam subjected to uniformly distributed load to corresponding cantilever beam with same parameters?

A : 1/10

B : 1/8

C : 1/6

D : 1/4

Q:) Consider following for bending stress induced in a beam:

1. Directly proportional to modulus of elasticity
2. Inversely proportional to curvature and
3. Inversely proportional to radius of radius of curvature

Which one of the following is correct answer?

A : 1 only

B : 1 and 2 only

C : 1 and 3 only

D : all

Q:) What is the static and kinematic indeterminacies respectively of a two strey two bay frame having fixed support at base?

A : 9 , 15

B : 9 , 12

C : 6 , 15

D : 6 , 12

Q:) Creep coefficient at the edge of 7 - days loading is:

A : 2.2

B : 1.6

C : 1.1

D : 0.9

Q:) Maximum allowed deflection in a simply supported RC beam (span, L) under uniformly distributed load including long term elastic and shirnkage effect is:

A : L/350

B : L/250

C : L/200

D : L/175

Q:) The maximum strain in tension reinforcement (having yield stress f_y and elasticity modulus E_s,) in a flexural member shall not be less than

A : $\frac{f_y}{1.15E_s}$

B : $\frac{f_y}{1.5E_s}$

C : $\frac{f_y}{1.15E_s}$+0.002

D : $\frac{f_y}{1.5E_s}$0.002

Q:) Which shall be maximum allowed anchorage length of U-type hook in a RC compression member?

A : 4 times diameter of the bar

B : 6 times diameter of the bar

C : 8 times diameter of the bar

D : 16 times diameter of the bar

Q:) Which one of the following is most suitable section for steel column section?

A : ISWB

B : ISMB

C : ISHB

D : ISLB

Q:) Design strength in tension of a steel plate subjected to failure by rupture mode is expressed as:

A : $0.9\left(\frac{A_n f_u}{y_{ml}}\right)$

B : $0.9\left(\frac{A_n f_u}{y_{mv}}\right)$

C : $1.2\left(\frac{A_n f_u}{y_{ml}}\right)$

D : $1.5\left(\frac{A_n f_u}{y_{ml}}\right)$

Q:) Area moment of inertia of a circular section of diameter D is:

A : $\pi D_3/32$

B : $\pi D_4/32$

C : $\pi D_3/64$

D : $\pi D_4/64$

Q:) A cantilever beam of a span L, is subjected a moment, P at its free end. The bending moment induced at its support will be:

A : P/4

B : P/3

C : P/2

D : P/4

Q:) Radius of gyration of a column section having moment of inertia. I and cross sectional area A is:

A : $\sqrt{\frac{1}{A}}$

B : $\sqrt{IA}$

C : I/A

D : IA

Q:) A column pinned at both the ends has length L and flexural rigidity EI can carry a critical load of:

A : $\frac{4\pi^2 EI}{L^2}$

B : $\frac{2\pi^2 EI}{L^2}$

C : $\frac{\pi^2 EI}{L^2}$

D : $\frac{\pi^2 EI}{L^2}$

Q:) Static indeterminacy of a beam fixed at both the ends is:

A : 6

B : 3

C : 2

D : 1

Q:) The most rel reliable estimate is.

A : Detailed estimate

B : Preliminary estimate

C : Plinth area estimate

D : Cube rate estimate.

Q:) Deflection due to bending moment in a regular beam of uniform cross section is proportional to:

A : EI

B : $\frac{1}{EI}$

C : $\frac{1}{(EI)^2}$

D : $(EI)^2$

Q:) Deflection of tip of a cantilever beam of span length, L carrying uniformly distributed load, q is:

A : $\frac{qL^2}{24\ EI}$

B : $\frac{qL^2}{12\ EI}$

C : $\frac{qL^4}{8\ EI}$

D : $\frac{qL^4}{6\ EI}$

Q:) A Rubber bar of length 1.5m and 200 mm diameter is stretched along its length by 20mm by a force of 15 kN. As a result its diameter is reduced by 2mm. The poisons' ratio of the bar material will be:

A : 5

B : 1

C : 0.75

D : 0.5

Q:) A simply supported beam of span L, is subjected to two point loads (each of magnitude P) at a distance of L/3 from either support, The maximum bending moment in the beam will be

A : PL

B : PL/2

C : PL/3

D : PL/4

Q:) A rectangular beam section has width 120 mm and depth 500mm. The moment of inertia about an axis t mid depth parallel to width will be:

A : 15×10^{10} mm^4

B : 12×10^{10} mm^4

C : 125×10^{6} mm^4

D : 125×10^{7} mm^4

Q:) A column of length 1.5 m is pinned at both ends has radius of gyration 150mm. The slenderness ratio will be:

A : 150

B : 100

C : 10

D : 5

Q:) In a simply subjected beam, maximum shear stress in a triangular cross-section (altitude h) occurs at a distance:

A : h/3 from bottom of beam

B : h/3 from top of the beam

C : h/6 from neutral axis

D : h/5 from top the beam