Q :) If characteristic compressive strength at 28 days is 40 N/mm² and the standard deviation is 5 N/mm², the target strength at 28 days for concrete mix proportioning

A : 40 N/mm²

B : 45 N/mm²

C : 43.25 N/mm²

D : 48.25 N/mm²

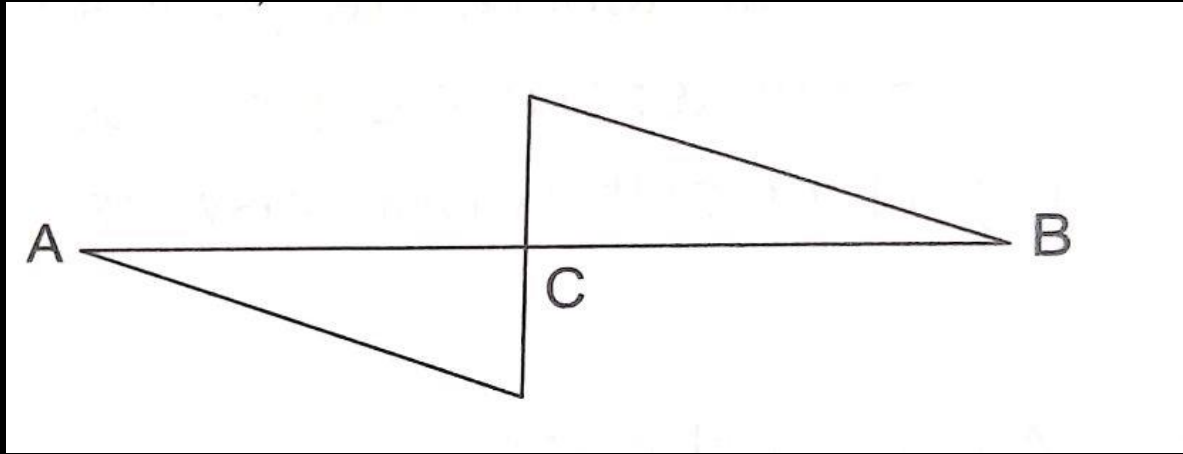Q :) A statistically indeterminate structure is the one which

A : Cannot be analysed using equations of statics alone

B : Cannot be analysed at all

C : Is not stable for general loading

D : Can be analysed with the equations of statics along

Q :) If the BMD for a simply supported beam is as shown below, the load on the beam will be
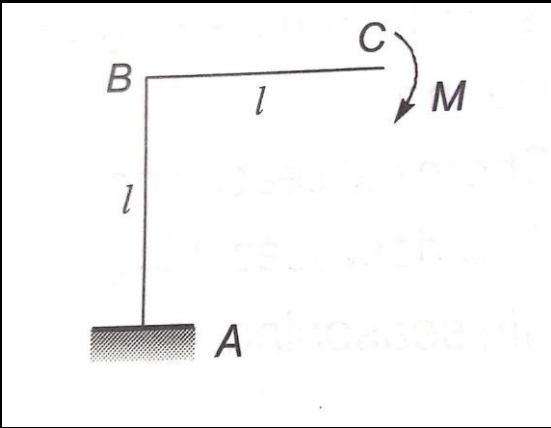

A : A concentrated load at C

B : Equal and opposite couples at the ends A and B

C : A uniformly distributed load acting on the entire span

D : Concentrated couple at C

Q :) The ratio of maximum deflection to maximum flexural stress in a simply supported beam of span l and depth d subjected to a concentrated load at mid-span is

A : $\dfrac{l^2}{(6Ed)}$

B : $\dfrac{l^2}{(8Ed)}$

C : $\dfrac{l^2}{(16Ed)}$

D : $\dfrac{l^2}{(60Ed)}$

Q :) Which of the following is displacement method?

A : Flexibility method

B : Moment distribution method

C : Kani's method

D : None of the given answers

Q :) The absolute stiffness of a prismatic member with one end hinged is

A : $\dfrac{2EI}{l}$

B : $\dfrac{4EI}{l}$

C : $\dfrac{3EI}{l}$

D : $\dfrac{EI}{l}$

Q :) A steel column in a multi-storeyed structure carries a load of 125 kN. It is builtup of 2 ISMC 350 channels connected by lacing. The lacing carries a load of

A : 125 kN

B : 12.5 kN

C : 3.125 kN

D : Zero

Q :) An electric pole 5 m high is fixed into the foundation. It carries a wire at the top and is free to move sideways. The effective length of the pole is

A : 3.25 m

B : 4 m

C : 5 m

D : 10 m

Q :) The maximum slenderness ratio of compression members carrying loads resulting from dead loads and superimposed loads is

A : 100

B : 180

C : 150

D : 200

Q :) The minimum thickness of web plate from corrsion point of view should be

A : 12 mm

B : 6 mm

C : 3 mm

D : 20 mm

Q :) For compression member having the same effective length about any cross-sectional aids, the most preferred section from the point of view of strength is
A : A box
B : An I-section
C : A circular tube
D : A single angle

Q :) The Eddy's theorem is valid for

A : Vertical loads only

B : Horizontal loads only

C : Dynamic loads only

D : All loads

Q :) In Pigeaud's coefficient method for the analysis of an interior panel of a T-beam bridge

A : Notation for coefficient as $\alpha x4$ and $\alpha y4$ includes suffix 4 since panel is continues on all the 4 edges

B : Poisson's ratio of concrete has no contribution

C : Applicability is restricted, to the case when wheel load is centrally placed

D : Dispersion of load is considered through wearing coat only

Q :) The members of a roof truss which carry axial compression are called

A : Column

B : Beam

C : Stanchion

D : Strut

Q :) Shape factor for circular section is

A : $\dfrac{4}{\pi}$

B : $\dfrac{16\pi}{3}$

C : $\dfrac{20}{3\pi}$

D : $\dfrac{16}{3\pi}$

Q :) As per IS-800, the minimum pitch of bolts in a row of bolts is recommended as the diameter of the bolt times

A : 2

B : 2.5

C : 3

D : 4

Q :) Loss of stress with time at constant strain in steel is called

A : Relaxation

B : Creep

C : Shrinkage

D : Ductility

Q :) In a footing, it is usual to assume that the maximum value of transverse bending will occur at a distance, equal to (measured from the face of the column)

A : Half the effective depth

B : Effective depth

C : Twice the effective depth

D : None of the given answers

Q :) The minimum and maximum % of reinforcement in RCC short column are

A : 0.8 and 6

B : 6 and 0.8

C : 0.8 and 4

D : 4 and 6

Q :) A simply supported RC beam carries UDL and is referred as beam A. A similar beam is restressed and carries the same UDL as the beam A This beam is referred as beam B. The mid-span deflection of beam A will be

A : More than that of beam B

B : Less than that of beam B

C : The same as that of beam B

D : Generally less but sometimes more depending upon the magnitude of UDL

Q :) As the span of a bridge increases, the impact factor

A : Decreases

B : Increases

C : Decreases up to a critical value of span and then increases

D : Increases up to a critical value of span and then decreases

Q :) The neutral axis of the reinforced beam passes through

A : Centre of gravity of the concrete section

B : Meta-centre of the concrete section

C : Centroid of the transformed section

D : Centroid of the concrete section

Q :) The minimum size of the reinforcement bar in RCC column is
A : 3 mm
B : 6 mm
C : 12 mm
D : 10 mm

Q :) Lateral ties in RC columns are provided to resist

A : Bending moment

B : Shear

C : Budding of longitudinal steel bars

D : Both bending moment and shear

Q :) The section in which concrete is not fully stressed to its maximum permissible value while stress in steel reaches its maximum value, is called
A : Under reinforced section
B : Critical section
C : Over reinforced section
D : Balanced section

Q :) In a slab, the transverse reinforcement is provided at _____ to the span of the slab.
A : 45 degrees
B : 60 degrees
C : 75 degrees
D : Right angle

Q :) What type of stresses are artifically induced by Prestressed concrete in a structure before it is loaded?
A : Tensile
B : Torsional
C : Shear
D : Compressive

Q :) In a restressed concrete member
A : high strength concrete should be used
B : Normal strength concrete should be used
C : High strength concrete and low tensile steel should be used
D : High strength concrete and high tensile steel should be used

Q :) Drops are provided in flat slab to resist primarily

A : Bending moment

B : Thrust

C : Shear

D : Torsion

Q :) Total amount of shrinkage strain for a pretensioned member is

A : 3×10^{-4}

B : 3×10^{-5}

C : 3×10^{-6}

D : 3×10^{-7}

Q :) PERT stands for

A : Programme evalution and research technique

B : Programme examination and review technique

C : Programme examination and research technique

D : Programme evalution and review technique