Q:) In T-shaped RCC retaining walls, the main reinforcement in the stem is provided on:

A : The front face in one direction

B : The front face in both direction

C : The inner face in one direction

D : The inner face in both direction

Q:) If nominal shear stress τ_v exceeds the design shear strength of concrete τ_c, the nominal shear reinforcement as per IS : 456-2000 shall be provided for a shear stress equal to:

A : τ_v

B : τ_c

C : $\tau_v - \tau_c$

D : $\tau_v + \tau_c$

Q:) As per IS 456, the minimum grade of concrete for the design of reinforced concrete structure in moderate exposure condition is:

A : M 20

B : M 25

C : M 15

D : M 30

Q:) In reinforced concrete footing on soils, the minimum thickness at the edge should not be less than:

A : 150 mm

B : 250 mm

C : 100 mm

D : 200 mm

Q:) The gross diameter of a rivet is the diameter of:

A : Cold rivet measured before driving

B : Rivet measured after driving

C : Rivet hole

D : None of these

Q:) The maximum permissible slenderness ratio of tension members liable to reversal of stress due to action of wind and earthquake is:

A : 300

B : 350

C : 400

D : 425

Q:) The maximum deflection for a steel beam as per IS code should not exceed:

A : 1/150 of span

B : 1/250 of span

C : 1/325 of span

D : 1/350 of span

Q:) The average shear stress in a member calculated on the cross section of unstiffened web shall not exceed:

A : 0.45 f_y

B : 0.40 f_y

C : 0.65 f_y

D : 0.66 f_y

Q:) Generally the purlins are placed at the panel points so as to avoid:

A : Axial force in rafter

B : Shear force in rafter

C : Deflection of rafter

D : Bending moment in rafter

Q:) The yield stress of mild steel of normally rolled structural steel is about (in N/mmf^2):

A : 240 to 260

B : 330 to 360

C : 420

D : 550

Q:) In a plate girder, bending is primarily resisted by:

A : Web plate

B : Flange plate only

C : Flange angle only

D : Flange plate and flange angle

Q:) The effective length of a steel compression member which is effectively held in position at both ends but restrained in direction at one end only:

A : L

B : 0.8 L

C : 1.2 L

D : 1.5 L

Q:) One of the main disadvantage of the bar chart for construction management is:

A : The time schedule is not shown properly

B : Progress of the work cannot be monitored

C : The financial aspect is not shown

D : Does not show the interdependencies of the activity

Q:) Which of the following does not represent an activity?

A : Foundation is being dug

B : Site located

C : The office area is being cleaned

D : None of these

Q:) Critical Path Method (CPM) network is:

A : Activity oriented

B : Event oriented

C : Both activity as well as event oriented

D : None of these

Q:) The security deposit deducted from contactor's bill is:

A : Refunded as soon as the construction is over

B : Not refunded

C : Refunded in the middle of the contract

D : Refunded after maintenance period

Q:) Earliest finish of an activity is always:

A : Less than earliest event of the following node

B : Greater than earliest even of the following node

C : Less than or equal to earliest event of the following node

D : Greater than or equal to earliest event of the following node

Q:) A contract is an agreement between:

A : Two parties valid in law

B : Several agencies

C : Three agencies

D : Two parties without legal binding

Q:) Measurement of 50 mm thick concrete flooring will be done in:

A : Cubic m

B : % sq m

C : Meter

D : Sq.m

Q:) The reduction in project time normally results in:

A : Increasing the direct cost and decreasing the indirect cost

B : Decreasing the direct cost and increasing the indirect cost

C : Increasing the direct cost and the indirect cost both

D : Decreasing the direct cost and the indirect cost both

Q:) A document containing detailed description of all the items of work together with their current rates is called:

A : Analysis of rates

B : Abstract of estimate

C : Schedule of rates

D : None of these

Q:) Work Breakdown Structure for a construction project will help in:

A : Breaking the project into several elements

B : Identifying the activities

C : Identifying the functional elements of a project and their interrelationship

D : None of these

Q:) The hydraulic mean depth for a circular pipe of diameter d is:

A : d/6

B : d/4

C : d/4

D : d

Q:) In case of flow through parallel pipes:

A : The head loss for all the pipes is same

B : The head loss is different in different pipes

C : The head loss is the sum of head losses in the various pipes

D : None of the above

Q:) When the Mach number is less than unity, the flow is called:

A : Sub-sonic flow

B : Sonic flow

C : Super-sonic flow

D : Hyper-sonic flow

Q:) The power developed by a turbine is:

A : Directly proportional to $H^{1/2}$

B : Inversely proportional to $H^{1/2}$

C : Directly proportional to $H^{3/2}$

D : Inversely proportional to $H^{3/2}$

Q:) The graphical representation of average rainfall and rainfall excess (i.e., rainfall minus infiltration) rates over specified areas during successive unit time intervals during a storm is known as:

A : Hydrograph

B : Unit hydrograph

C : Hyetograph

D : None of the above

Q:) The phenomenon occuring in an open channel when a rapidly flowing stream abruptly changes to a slowly flowing stream causing a distinct rise of liquid surface, is:

A : Water hammer

B : Hydraulic jump

C : Critical discharge

D : None of the above

Q:) Dimensions of the dynamic viscosity (μ) are:

A : $MLT^{-2}MLT^{-2}$

B : $M^{-1}L^{-1}T^{-1}M^{-1}L^{-1}T^{-1}$

C : $ML^{-1}T^{-1}ML^{-1}T^{-1}$

D : None of the above

Q:) The maximum vacuum created at the summit of a syphon is:

A : 2.7 m of water

B : 7.4 m of water

C : 74 mm of water

D : 74 m of water

Q:) An ideal flow of a liquid obeys:

A : Continuity equation

B : Newton's law of viscosity

C : Newton's second law of motion

D : Dynamic viscosity law

Q:) Differential manometers are used to measure:

A : Pressure in water channels, pipes, etc.

B : Difference in pressure at two points

C : Atmospheric pressure

D : Very low pressure

Q:) The standard height of a standard rain gauge is:

A : 10 cm

B : 20 cm

C : 30 cm

D : 40 cm

Q:) For determination of average annual precipitation in a catchment basin, the best method is:

A : Arithmetical Method

B : Thiessen's mean Method

C : Isohyetal Method

D : None of the above

Q:) An area is declared drought affected if its mean rainfall is less than:

A : 0.5

B : 0.6

C : 0.75

D : 0.85

Q:) The Indian Railway has been divided into:

A : Six zones

B : Eight zones

C : Twelve zones

D : Sixteen zones

Q:) Which of the following sleepers provide the best elasticity of track?

A : Wooden sleeper

B : Cast iron sleeper

C : Steel sleeper

D : RCC sleeper

Q:) Maximum super-elevation on hill roads should not exceed:

A : 0.05

B : 0.07

C : 0.08

D : 0.1

Q:) Coning of wheels is provided:

A : To check lateral movement of wheels

B : To avoid damage to inner faces of rails

C : To avoid discomfort to passengers

D : All of the above

Q:) Bull headed rails are generally provided on:

A : Points and crossing

B : Straight tangents

C : Curved tracks

D : Meter gauge tracks

Q:) The head of Public Works Departement of any Indian state is:

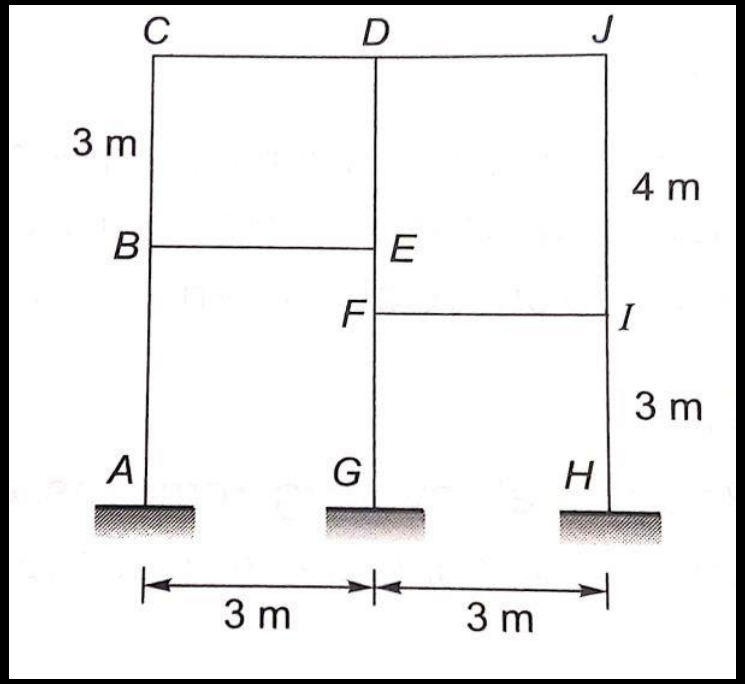
A : Transport Minister

B : Chief Engineer

C : Superintending Engineer

D : Executive Engineer

Q:) Determine the degree of static and kinematic indeterminacy of the frame structure as shown in the figure:



A : 15,8

B : 12,12

C : 12,10

D : 15,9

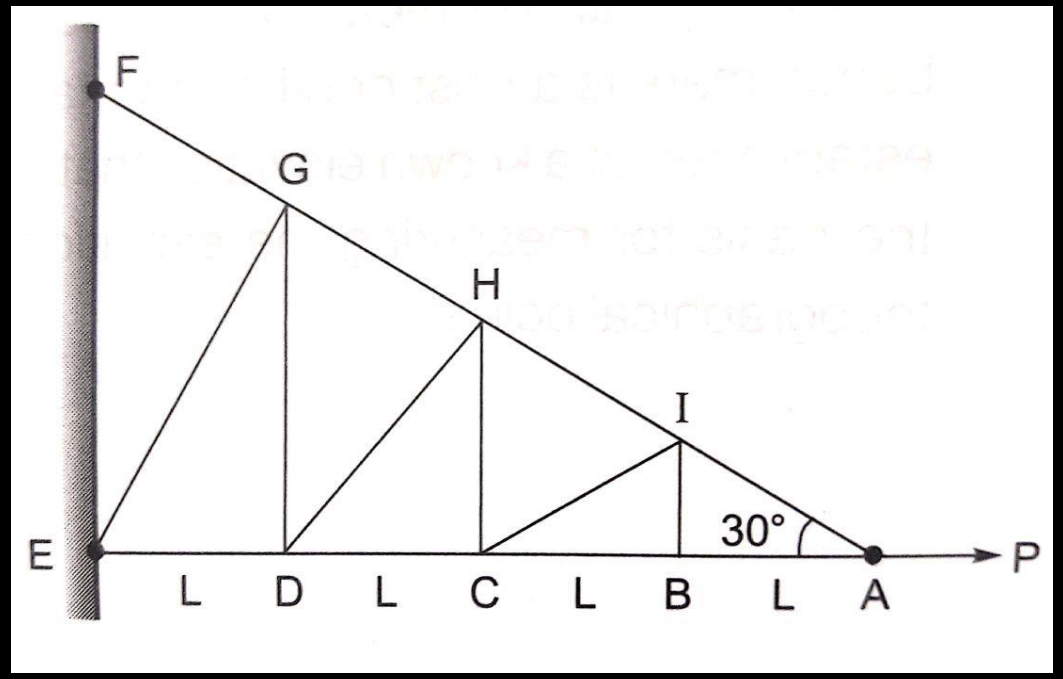
Q:) A cantilever truss as shown in the figure is subjected to a horizontal load 'P' at joint A. The total number of zero force members in the truss is

A : 6

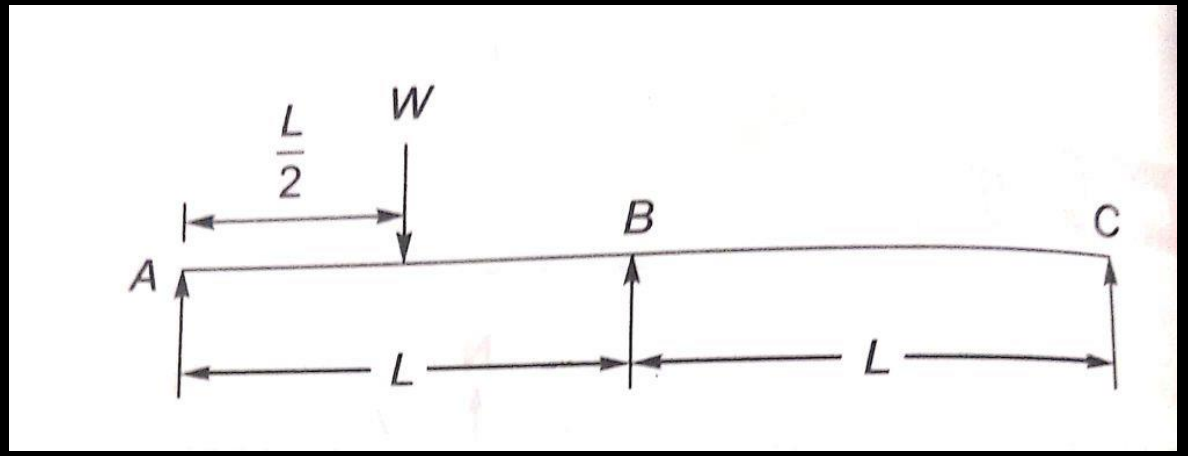
B : 4

C : 9

D : 10



Q:) A continuous beam ABC is as shown in the figure. End supports are simple (i.e., A and C) and span AB = span BC = L. There is a concentrated load 'W' at the centre of the span AB while no load over the span BC. E_j is same for both the spans. What is the moment at the continuous support B?



A : $-WL^3/16$

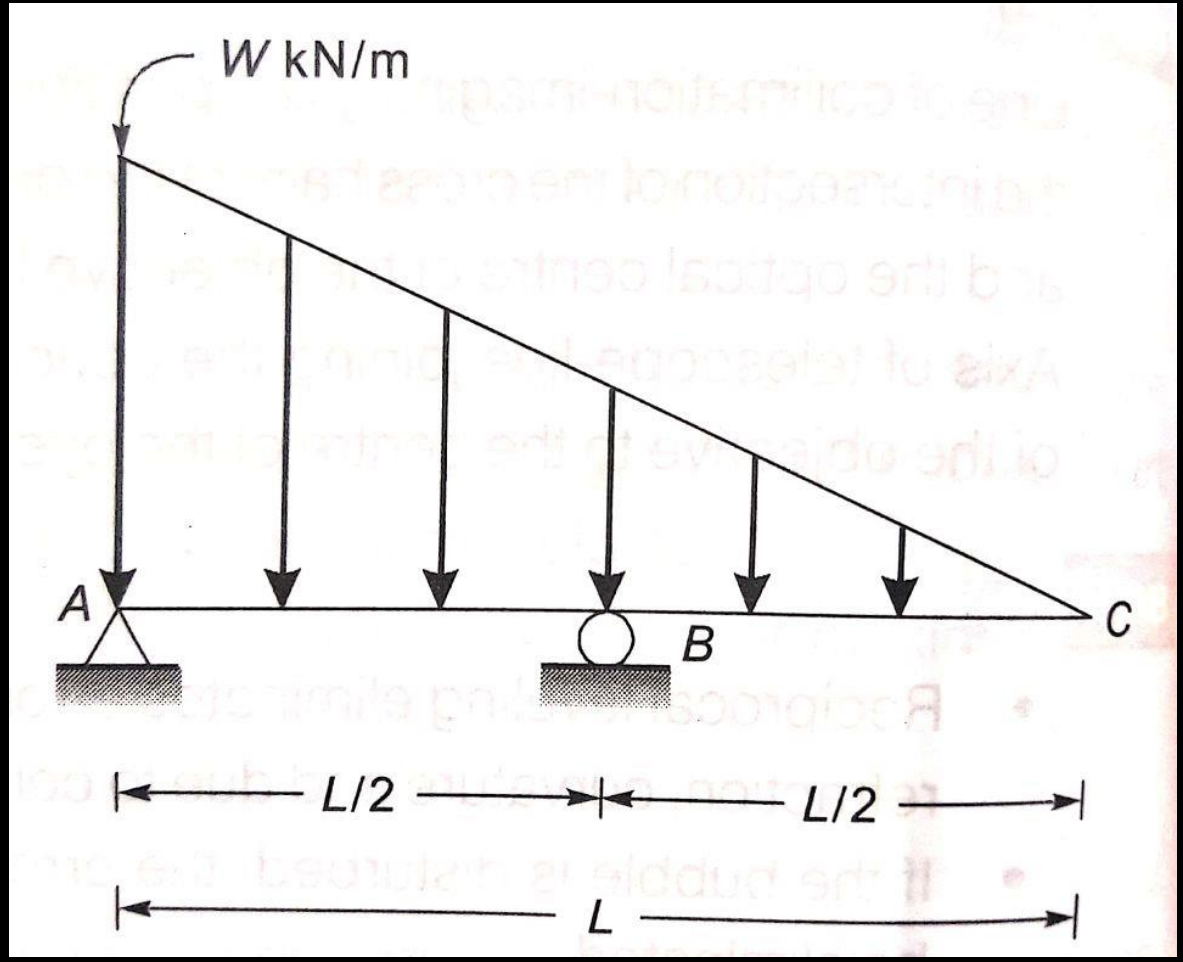
B : $-WL^2/32$

C : $-3WL^2/32$

D : $-3WL^2/16$

Q:) A beam ABC is supported and loaded as shown in the figure. Find the support reactions at A and B. (Neglect horizontal reaction at A)

A : WL/3,WL/3
B : WL/3,WL/6
C : WL/6,WL/3
D : WL/6,WL/6



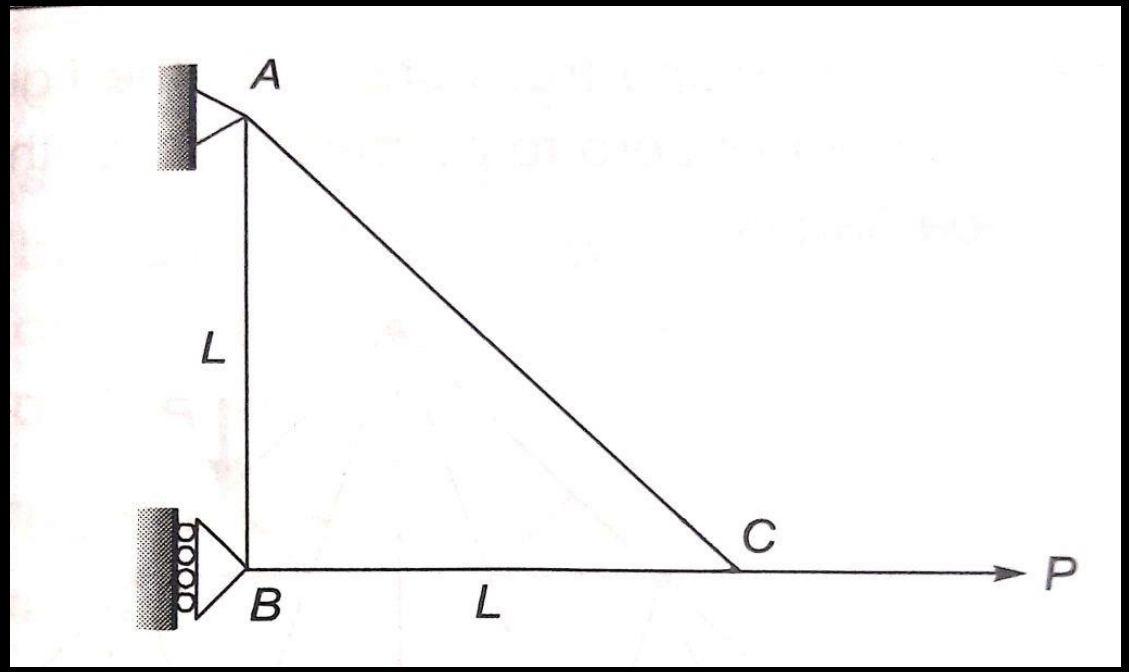
Q:) A simple truss ABC is supported at A and B as shown in the figure. If a point load (P) along BC is applied at joint C in horizontal direction, then what will be the vertical deflection at C? Assuming same C/5 area and same materials (i.e., A, E, I same for all members).

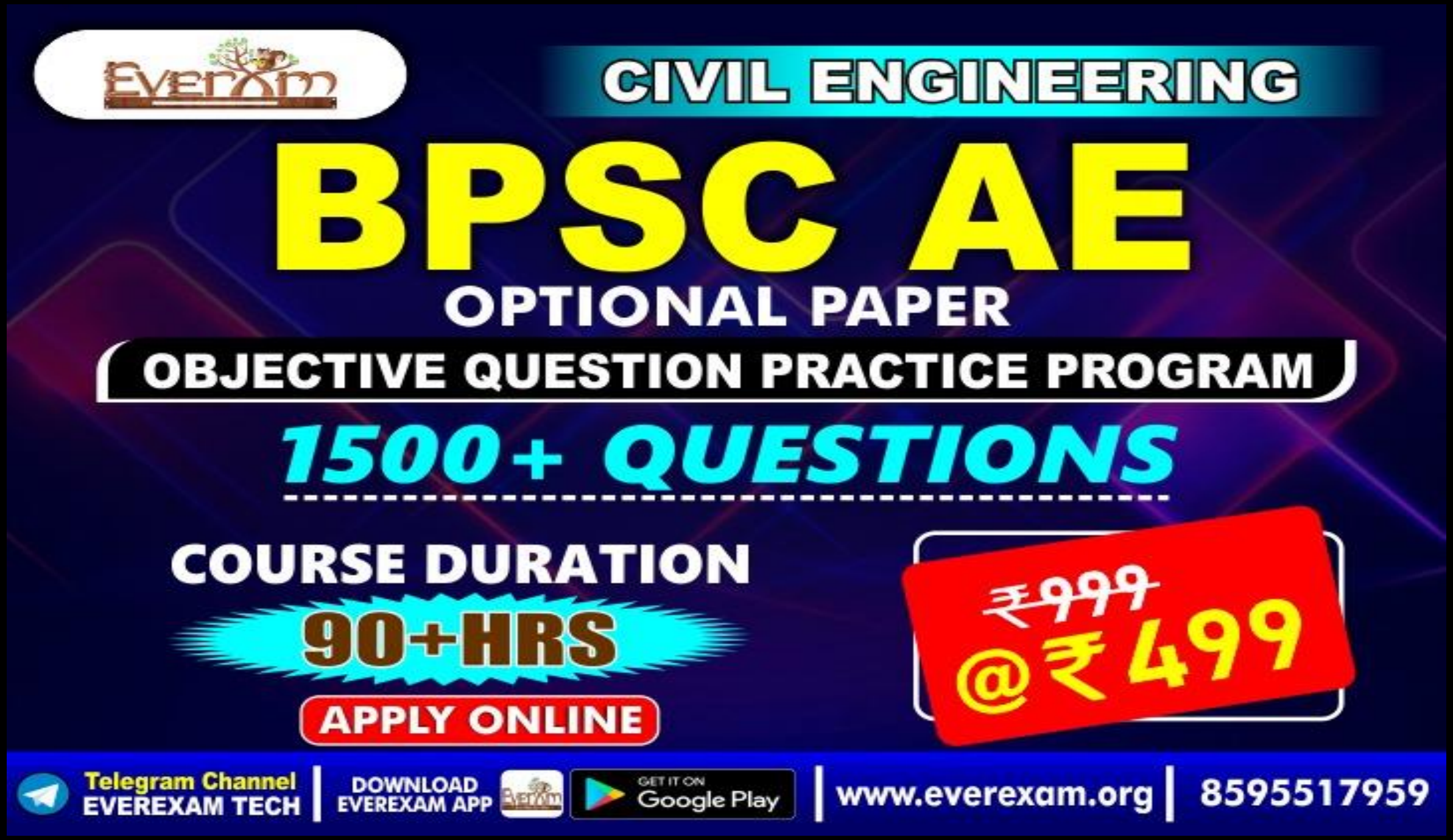
A : $\frac{PL}{AE}(\uparrow)$

B : $\frac{2PL}{AE}(\downarrow)$

C : $\frac{PL}{AE}(\downarrow)$

D : $\frac{2PL}{3AE}(\downarrow)$

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