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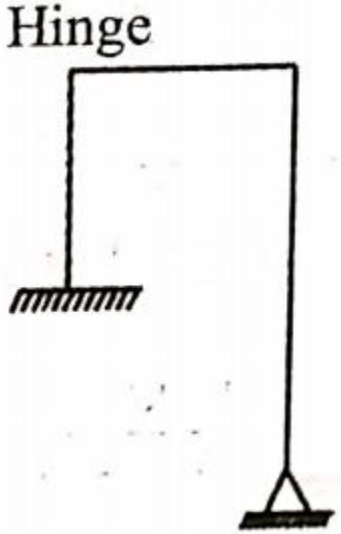
Q:) For the plane frame as shown in the figure, the degree of kinematic indeterminacy neglecting axial deformation, is
[Rajasthan PSC 2018]



A : 3

B : 5

C : 7

D : 9

Q:) Which method not fall under the category of displacement methods? [M.P. Sub Eng. 2 Sep 2018 2.00 pm]

A : Moment distribution method

B : Slope deflection method

C : Method of consistent deformation

D : Kani's method

Q:) The magnitude of fixed end moment in a fixed beam of span 'l' subjected to a uniformly distributed load 'W' per unit length is [UK combined AE paper-I, 2012/

UTTRAKHAND AE 2013/UKPSC AE (paper-I) 2007]

A : $Wl/96$

B : $Wl^2/24$

C : $Wl^2/20$

D : $Wl^2/12$

Q:) Find the horizontal thrust in tonnes when a symmetrical parabolic arch of span 25 meters rise to 3 meters hinged at the springing.
Given uniformly distributed load = 5 tonnes per meter run of the span [M.P. vyapam draftman 2016]

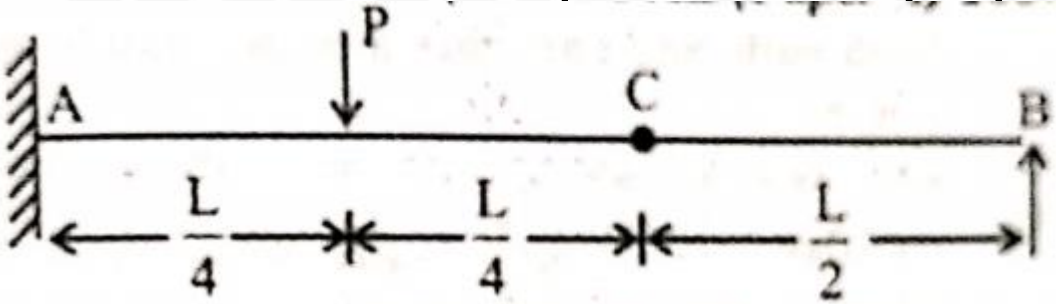
A : 129 t./129 tan

B : 130 t./130 tan

C : 131 t./131 tan

D : 132 t./132 tan

Q:) The propped cantilever beam shown in the figure is provided with a hinge at C. A and B are at the same level. The reaction at fixed end A will be: [UKPSC AE (Paper-I) 2007]



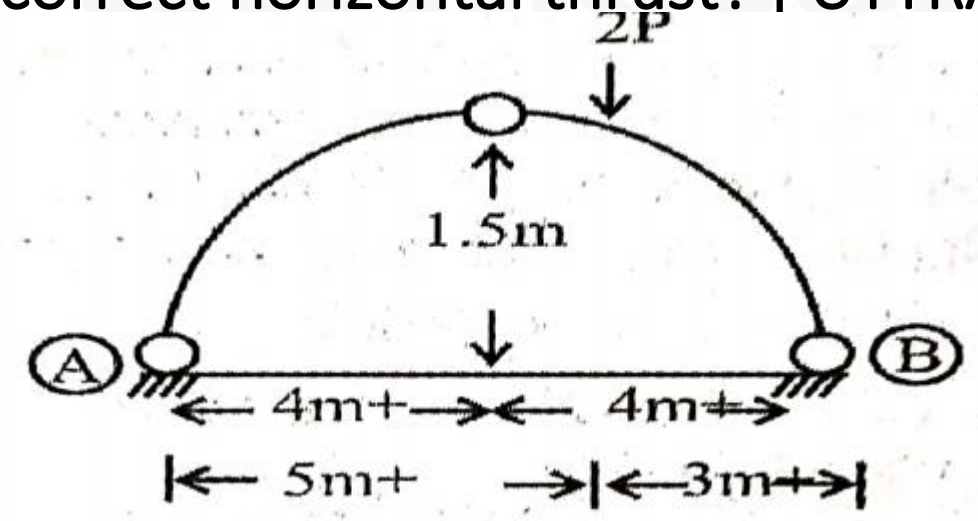
A : $\frac{4}{3}P$

B : P

C : $\frac{3}{4}P$

D : $\frac{P}{2}$

Q:) A three-hinged symmetrical arch is loaded as shown in the figure below. Which one of the following is the magnitude of the correct horizontal thrust? [UTTRAKHAND AE 2013]



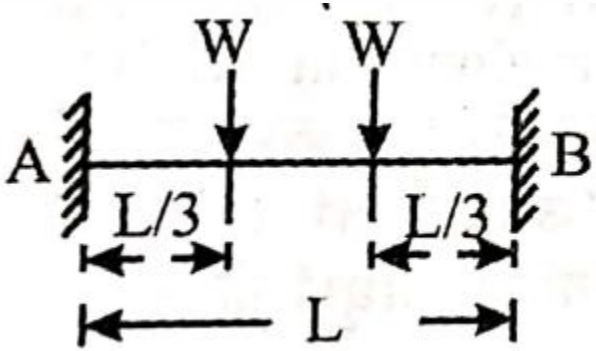
A : 2.66 P

B : 2 P

C : 1.5 P

D : 0.75 P

Q:) What are the bending moments at ends A and B of uniform foxed beam AB as shown in figure when two concentrated loads acts at 1/3 spans ? [UTTRAKHAND AE 2013]



A : $\frac{2}{9}WL$

B : $\frac{4}{9}WL$

C : $\frac{6}{9}WL$

D : $\frac{8}{9}WL$

Q:) Foa a 6 m long fixed beam caring two loads of 300 kN, each support, the point of contra flexure will be situated from distance 'a' from left support, where 'a' is

[LMRC AE 2017 I-shift]

A : 1.33 m

B : 3 m

C : 2 m

D : 1.5 m

Q:) A uniform beam of span 2L carrying uniformly distributed load of 3 W per unit length, is rigidly fixed at both supports, Calculate it's bending moment at mid span.[UPRVUNL JE 2014]

A : $WL^2/24$

B : $WL^2/2$

C : $WL^2/12$

D : $WL^2/18$

Q:) If a three hinged parabolic arch carries a uniformly distributed load on its entire span, every section of the arch resists [NBCC JE 2018 (Morning shift)]

A : Tensile force

B : Shear force

C : Compressive force

D : Bending moment

Q:) A two hinged parabolic arch of span l and rise h carries a load varying from zero at the left end to w per unit run at the right end. The horizontal thrust is:
[SSC JE 29-01-2018 (Evening shift)]

A : $\frac{(wl^2)}{4h}$

B : $\frac{(wl^2)}{8h}$

C : $\frac{(wl^2)}{12h}$

D : $\frac{(wl^2)}{16h}$

Q:) There are two hinged semicircular arches. A, B and C of radi 5 m, 7.5 m, and 10 m respectively and each carries a concentrated load W at their crowns. The horizontal thrust at their support will be in the ratio of:
[SSC JE 24-01-2018 (Evening Shift)]

A : $1 : 1\frac{1}{2} : 2$

B : $2 : 1\frac{1}{2} : 1$

C : 1 : 1: 2

D : None of these

Q:) An isolated load W is acting at a distance 'a' from the left-hand support of a three-hinged arch of span '2l' and rise 'h' hinged at the crown. The vertical reaction of the arch is:
[SSC JE 22.1.2018 (Evening Shift)]

A : $\frac{Wa}{2l}$

B : $\frac{Wl}{a}$

C : $\frac{Wa}{l}$

D : $\frac{(W^a}{2l}$

Q:) What does the influence line for Bending moment indicate?
Benning moment at any section on the structure for a given positions of load.
Bending moment at a given section for any position of a point load. [SSC JE 2 MARCH 2017 Morning Shift]

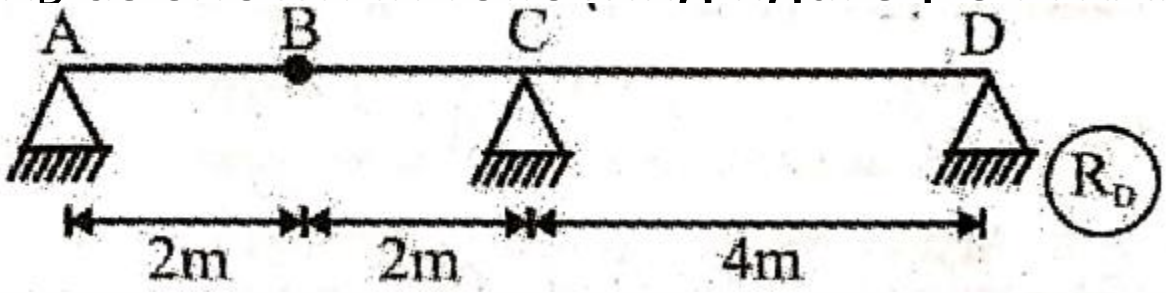
A : Only A

B : Only B

C : Both A and B

D : Neither A nor B

Q:) What is the ordinate of influence line at point B for reaction R_D as shown in following figure [UTTRAKHAND AE 2013]



A : 0.4

B : 0.2

C : 0.5

D : Zero

Q:) The maximum bending moment in a beam under a wheel load caused by a train of moving load, is
[UTTRAKHAND AE 2013]

A : When this wheel and the C.G. of the total system are equidistant from the supports of the beam

B : Always at the centre

C : Closest to CG of loads

D : None of above

Q:) A single load of 100 kN rolls along a girder of 20m simply supported span, the maximum bending moment is-
[AIRPORT AUTHORITY OF INDIA JE 2015]

A : 100 kNm

B : 500 kNm

C : 150 kNm

D : 600 kNm

Q:) The maximum bending moment due to moving load on a simply supported beam, occurs [Rajasthan JE 2015]

A : At the mid span

B : AT the supports

C : Under the load

D : Everywhere along the beam

Q:) A single rolling load of 8t rolls along a girder of 15 m span. The absolute maximum bending moment will be
[HPSSSB JE 03-07-2016]

A : 8t-m

B : 15t-m

C : 30t-m

D : 60t-m

Q:) Influence lines usually represent the effect of which load among the following only at a specified point on structural member ? [BSPHCL JE Civil 29-01-2019 (Batch-2)]

A : Concentrated load

B : Uniformly distributed load

C : Uniformly varying load

D : Moving load

Q:) If $\theta_h = \frac{wL^3}{6EI}$ and $y_h = \frac{wL^4}{8EI}$ are slope and deflection at B, the values for $\theta_c \; and \; y_c$ will be:
Civil ESIC JE, 2019

A : $\frac{wL^3}{48EI}, \frac{wL^4}{8EI}$

B : $\frac{wL^3}{6EI}, \frac{7wL^4}{24EI}$

C : $\frac{wL^3}{8EI}, \frac{wL^4}{24EI}$

D : $\frac{WL^2}{6EI}, \frac{wL^4}{8EI}$

Q:) When one end of a fixed beam deflects by δ then the bending moment at deflected end is
[NBCC JE 2018 (Morning Shift)]

A : $\frac{2EI\delta}{L^2}$

B : $\frac{3EI\delta}{L^2}$

C : $\frac{3EI\delta}{L^2}$

D : $\frac{6EI\delta}{L^2}$

Q:) Two fixed beams A and B are having same span 'L' beam 'B' carries a central point load 'W' and beam A carries an uniformly distributed load such that ratio of maximum deflections between beams B and A is [D.S.S.S.B. JE 2015]

A : 1

B : 2

C : 3

D : 4