Q : A cantilever beam of span 4 m carries a gradually varying load, zero intensity at the free end to 3kN/m at the fixed end. magnitude of shear force at the fixed end will be-
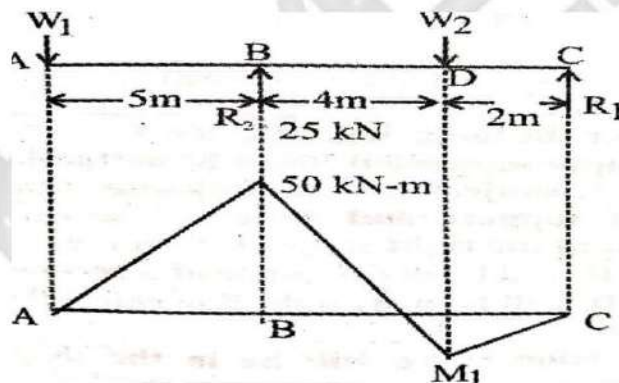
UPRVUNL JE 2019

A : 8 Kn
B : 9 kN
C : 6 kN
D : 12 kN

Q : In a fixed beam of span 'L', a concentrated load 'W' divides it as 'a' & 'b'. the fixed end moments are:

RRB JE CBT-II 28-08-2019(morning)

A : $(Wb^2a)/L^2$ & $(Wa^2b)/L^2$
B : All of the options
C : WB/L & Wa/L
D : $(Wb^2)/L$ & $(Wa^2)/L$

Q : Show above is bending moment diagram (+ indicate sagging moment and - indicate hogging moment) for the beam ABC shown below:

The values of W_1, M_1, W_2 and R_1 will be.

Civil ESIC JE.2019

A : 10kN, 10kN m, 20 kN, 5 kN
B : 10kN, 20kN m, 10kN, 5 kN
C : 50kN, 20kN m, 10 kN, 10 kN
D : 50kN, 10kN m, 5 kN, 15 kN

Q : Consider the following statements:

Sinking of an intermediate support of a continuous beam

(i) Reduced the negative moment at support.

(ii) Increases the negative moment at support.

(iii) Reduces the positive moment at support.

(iv) Increases the positive moment at the centre.

RBB JE CBT-II 28-08-2019(Evening)

Of these statements

A : (i)and(iv) are correct

B : (ii)and(iii) are correct

C : (ii)and(iv) are correct

D : (i)and(iii) are correct

Q : At either end of the plane frame, maximum number of possible bending moment are:

(SSB Himachal

Pradesh 18.11.2018)

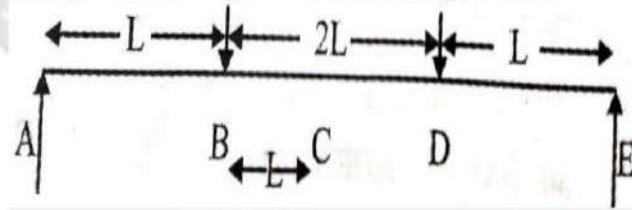A : Zero   B : One

C : Two   D : Three

Q : Which portions of the loaded beam shown in given figure is subjected to pure bending?

M.P sub Engg 4 sep 2018 9.00 am

A : AB   B : DE

C : AE   D : BD

Q : What will be the shear force for a section where the bending moment is constant?

A : A non-negative constant
B : An increasing value of shear
C : A decreasing value of shear
D : Zero

**Q :** For any structure, when both ends have roller supports, then the structure will be.

A : Stable
B : Unstable
C : (a) and (b) of the above
D : None of the above

Q : For which of the following members subjected to bending, there can be a point of contra flexure?

A : A simply supported beam
B : Cantilever beam with heavy point load at the end
C : Cantilever beam
D : Beam fixed at both ends

Q : The shear force diagram for a simply supported beam of span L is shown in the figure. the maximum bending moment in the beam is:
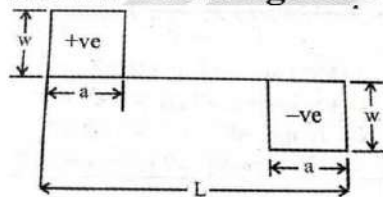
A : wL^2wL^2 B : $w(L^2-a)w(L^2-a)$
C : wa D : $w(L-a)$

Q : The influence lines for any stress function are used for obtaining the maximum value due to........

A : A single point load only
B : Uniform live load only
C : Several point loads
D : All option are correct

Q : The bending moment on a section is maximum where shear force-
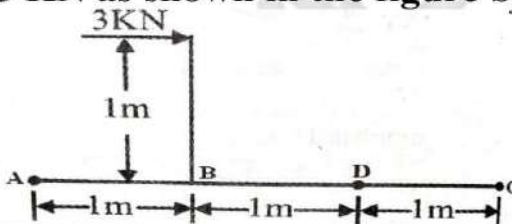
A : Is maximum
B : Is minimum
C : Is equal
D : Changes sign

Q : A lever is supported on two hinges at A andC. it carries a force of 3 KN as shown in the figure below. the bending moment B will be-

A : 3KN-m
B : 2 KN-m
C : 1 KN-m
D : None of the above

Q : At hinge, bending moment will be:

A : Zero
B : Low
C : Moderate
D : Maximum

Q : Bending moment at any section in a conjugate beam gives.....in the actual beam:

(UPJAL NIGAM JE 2016, Ist shift)
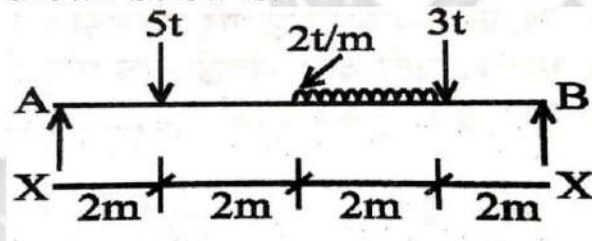
A : Slope
B : Curvature
C : Deflection
D : Bending moment

Q : A cantilever beam carries a concentrated load of W at its free end. the maximum shear in the beam is-

(AIRPORT AUTHORITY OF INDIA JE 2015)

A : 2 W
B : W/3
C : W/4
D : W

Q : The ratio of the reactions R_A & R_B of a simply supported beam shown below is:

(DMRC 2015)

A : 0.5
B : 0.4
C : 0.67
D : 1

Q : Which of the following is an assumption made in the theory of simple bending?

A : The value of Young's modulus varies in tension and compression
B : The material of the beam is not homogeneous
C : Beam material within elastic limit does not obey Hooke's law
D : The beam is in equilibrium

Q : The tensile stresses at a point across two mutual perpendicular planes are 150 N/mm². what is the normal stress on the plane inclined at 35º to axis of the minor stresses?

A : 120.50 N/mm²   B : 128.64 N/mm²
C : 125.33 N/mm²   D : 115 N/mm²

Q : The ratio of the length and depth of a simply supported rectangular beam which experiences maximum bending stress equal to tensile stress due to same load at its mis span is.

A : 1212   B : 2323
C : 1414   D : 1313

Q : A prismatic bar when subjected to pure bending assumes the shape of-

A : Catenary   B : Cubic parabola
C : Quadratic parabola   D : Arc of circle

Q : A beam has a square cross section of side 'a' the ratio of section modulus, when the side is horizontal to the section modulus when it is rotated 45º is.

A : a√2a2   B : √2 a2 a
C : √2a2a   D : √22

Q : Which among the following is/are the correct assumption in the theory of simple bending?

i. The loads act perpendicular to the beam axis.

ii. The beam bends to a circular arc.

iii. The beam is initially straight of constant cross-section.

(DFCCIL, 17-04-2016)

A : A and B   B : Only A
C : A,B and C   D : Only B

Q : In a section undergoing pure bending, the neutral surface is subjected to.

(HPSSSB JE 31 April 2017),(SSC JE 2013)

A : Compressive strain
B : Tensile strain
C : Zero strain
D : None of the above.

Q : The most economical section in bending.

(Rajasthan JE 2015/Haryana SSC JE 2015) SJNVL JE 07-10-2018
(SSC JE 2 MARCH 2017 Morning Shift) NBCC JE 2017

A : I-section
B : Circular section
C : Rectangular section
D : Channel section

Q : When the two ends of the compression members are fixed the effective length will be-

Hariyana SSC JE Shift-I(10.04.2018)

A : 0.8 L
B : 1.0 L
C : 0.65 L
D : 2.0 L

Q : An engineer wants to design a steel electric pole of 6 m height with end conditions as one end is restrained against translation and rotation while the other is free. the effective length of column he should consider while designing this pole would be:

A : 9 m   B : 12 m
C : 15 m   D : 6 m

Q : A stress elements is subjected to tensile stress of 5 MPa on both the principal planes. the radius of Mohr circle corresponding to this element will be.

A : 10 MPa   B : 7.5 MPa
C : 5 MPa   D : Zero

Q : If the diameter of shaft is 'D' and shear stress is 'τ' then what is the torque transmitted by shaft?

A : $(\pi/16)\tau D^3$
B : $(\pi/8)\tau D^3$
C : $(\pi/32)\tau D^3$
D : $(\pi/64)\tau D^3$

Q : If the Euler load for a column is 1000 kN and crushing load is 1200 kN, the Rankine load will approximately be:

A : 1200   B : 600
C : 900   D : 545