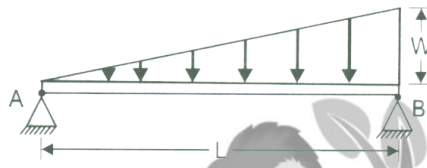


Q1 For the simply supported beam shown in the figure given below, at what distance from the support A, is the shear force zero?

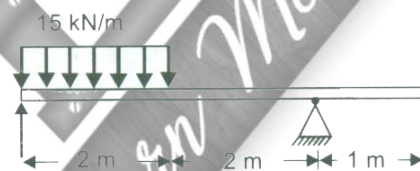


- a.  $L/4$
- b.  $L/3$
- c.  $L/2$
- d.  $L/\sqrt{3}$

Q2 Which one of the following is the bending moment diagram for the vertical cantilever beam loaded as shown in the figure ?



Q3



At what distance from left support of the above beam, is the shear force zero?

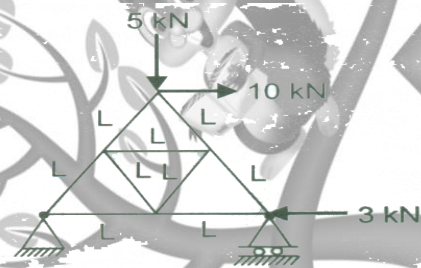
- a. 1 m
- b. 1.25 m
- c. 1.5 m
- d. 2.5 m

Q4 A simply supported beam AB of span L carries two concentrated loads W each at point  $L/3$  from A and B. what is the S.F in the middle one-third portion of the beam ?

- a.  $W/2$
- b.  $2W$

- c. W
- d. zero

Q5 In the frame shown above, what is the horizontal reaction at left support ?



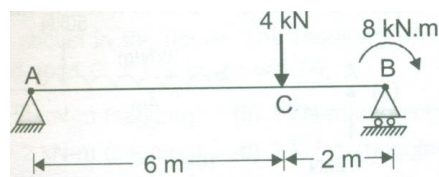
- a. 15 kN
- b. 13 kN
- c. 7 kN
- d. 2 kN

Q6 What is the reaction at the support D of the rigid-jointed structure shown above ?



- a. 10 kN
- b. 20 kN
- c. 30 kN
- d. 40 kN

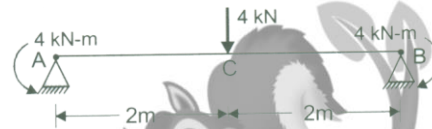
Q7 A simply supported beam AB is loaded as shown in the figure above. What is the SF in kN in the portion AC of the beam ?



- a. 2
- b. 4

- c. 0
- d. 6

Q 8 A simply supported beam is loaded as in figure the bending moment at C is

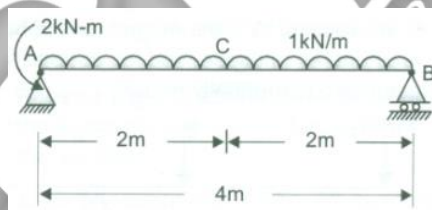


- a. 4 kN-m (Sagging)
- b. 4 kN-m (Hogging)
- c. 8 kN-m (Sagging)
- d. Zero

Q 9 Shear span is defined as the zone where

- a. Bending moment is zero
- b. Shear force is zero
- c. Shear force is constant
- d. Bending moment is constant

Q10



A freely supported beam AB of span 4m is subjected to a UDL of 1 kN/m over the full span and a moment of 2 kN-m at support A as shown in the figure.

The resulting BM at mid-span C of the beam will be

- a. 1 kN-m (Sagging)
- b. 1 kN-m (Hogging)
- c. 2 kN-m (Sagging)
- d. 2 kN-m (Hogging)

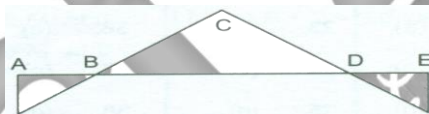
Q 11 Which of the following loads should be applied on a simply supported beam, so that the shear force is constant throughout its span ?

- a. U.D.L over the entire span
- b. Two concentrated loads equally spaced in the span

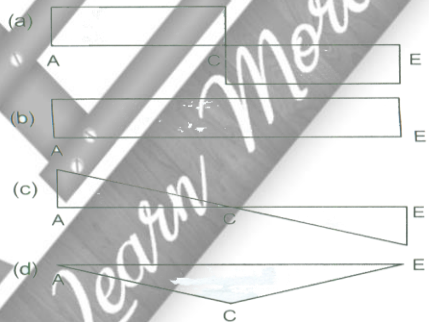
- c. A central concentrated load and a U.D.L over the entire span
- d. A couple anywhere in the span



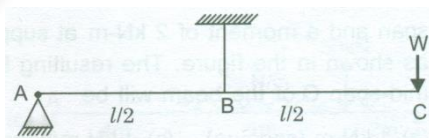
Q 12 The bending moment diagram of a beam is shown in the figure.



The shear force diagram of the beam is represent by



Q 13 A rigid bar shown in the figure is hinged at A, is supported by a rod at B, and carries and load W at C.



The resistive force in the rod is

- a.  $0.5 W$
- b.  $1.0W$
- c.  $1.5 W$
- d.  $2.0W$