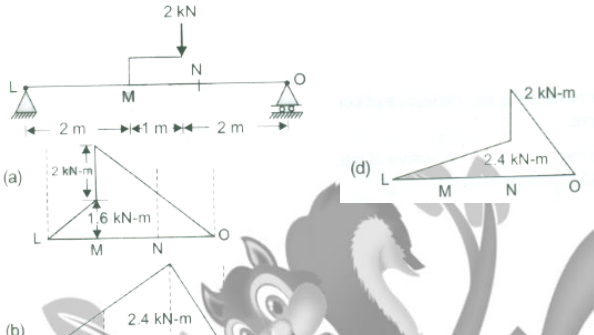
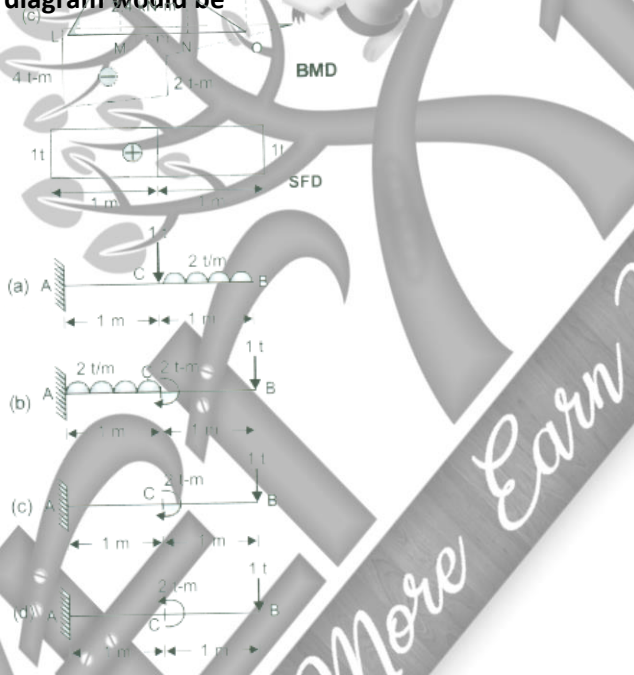
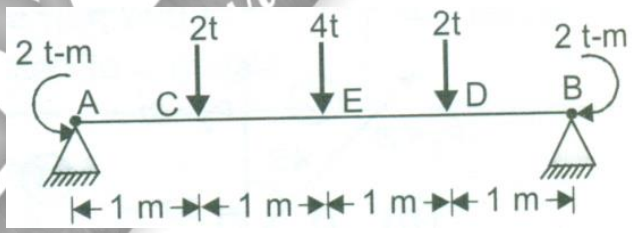
Q 1 The bending moment diagram of the beam shown in the figure is



Q 2 **The SFD and BMD for a beam are shown in the given figure I and II. The corresponding loading diagram would be**



Q3 **A simply supported beam is loaded as shown in the given figure. The bending moment at E would be**



a. **6 t-m (Sagging)**
b. **4 t-m (Hogging)**
c. **6 t-m (Hogging)**
d. **4 t-m (Sagging)**

Q 4 **Which one of the following statement is correct?**

a. **Shear force is the first derivative of bending moment**

b. **Shear force is the first derivative of intensity of load**

c. **Load intensity on a beam is the first derivative of bending moment.**

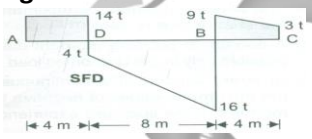
d. **Bending moment is the first derivative of shear force.**

Q 5 **For the beam shown in the given figure, the maximum positive bending moment is equal to negative bending moment . The value of L_1 is**

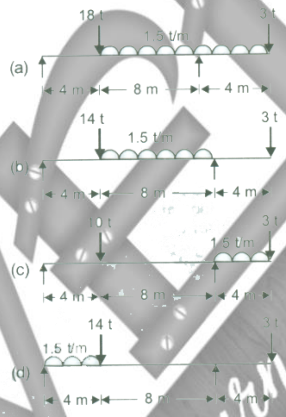
a. $\frac{L}{\sqrt{2}}$ **b.** $\frac{L}{\sqrt{3}}$

c. $\frac{L}{2}$ **d.** $\frac{L}{2\sqrt{2}}$

Q 6 **For the shear force diagram shown in given figure**



The loaded beam will be



Q 7 **Match List-I (Type and position of force on cantilever) with List-II (Shape of moment diagram for cantilever) and select the correct answer using the codes given below the lists:**

Codes :

a. **A – 1, B – 2, C – 3, D – 4**
b. **A – 4, B – 3, C – 2, D – 1**
c. **A – 3, B – 1, C – 4, D – 2**
d. **A – 1, B – 3, C – 4, D – 2**

Q 8 **If the area under the shear curve for a beam between the tow points X_1 and X_2 is 'k' , then the difference between the moments at the tow points X_1 and X_2 will be equal to**

a. **K**
b. **2k**
c. **k/2**
d. **k^2**

Q 9 **Consider the following statements:**

A simply-supported beam is subjected to a couple somewhere in the span. It would produce

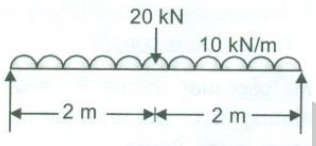
1. **A rectangular SF diagram.**
2. **Parabolic BM diagrams.**
3. **Both (+) ve and (-) BMs which are maximum at the point of application of the couple**

Of these statements

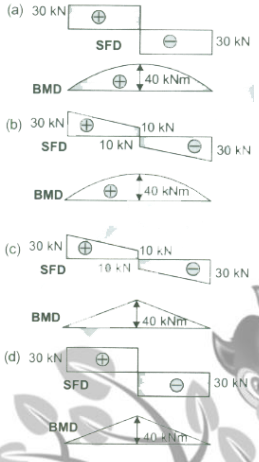
a. **1, 2, and 3 are correct**
b. **1 and 2 are correct**
c. **2 and 3 are correct**
d. **1 and 3 are correct**

Q 10 **A simply supported beam is shown in the given figure:**

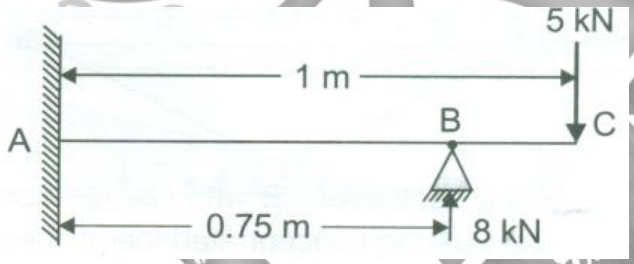
List-I	List-II
A-Carrying linearly varying load from zero at its free end and maximum at the fixed end **B-**Subjected to uniformly distributed load **C-**Carrying concentrated load at its free end **D-**Whose free end is subjected to a couple	1. Parabola 2. Rectangle 3. Cubic parabola 4. Triangle



The corresponding SFD and BMD would be

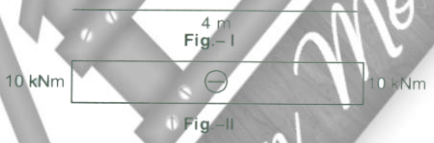


Q 11 **The beam ABC shown in the given figure is horizontal. The distance to the point of contraflexure from the fixed end 'A' is**

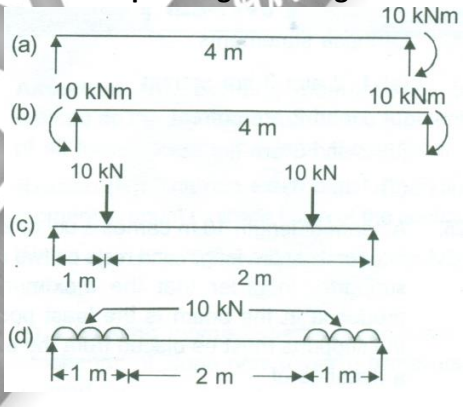


a. **0.333 m**
b. **0.666 m**
c. **0.25 m**
d. **0.75 m**

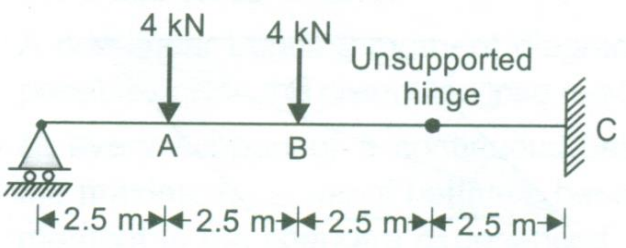
Q 12 **A beam S.F.D and B.M.D are shown in figure**



The corresponding load diagram will be

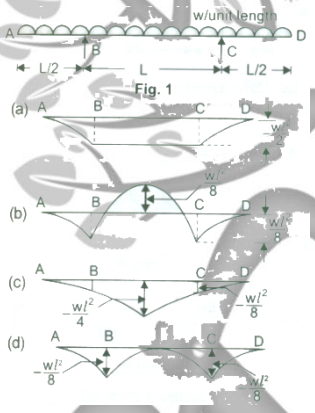


Q 13 **The bending moments at point A, B and C of the beam shown in the given figure will be**

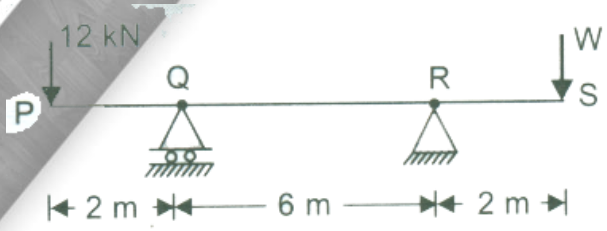


a. **10 kNm, 10 kNm and 10 kNm**
b. **10 kNm, 10 kNm and -10 kNm**
c. **20 kNm, 10 kNm and -10 kNm**
d. **10 kNm, -10 kNm and 20 kNm**

Q 14 **The bending moment diagram of the beam shown in figure**



Q 15 **A loaded beam PQRS is shown in the given figure**

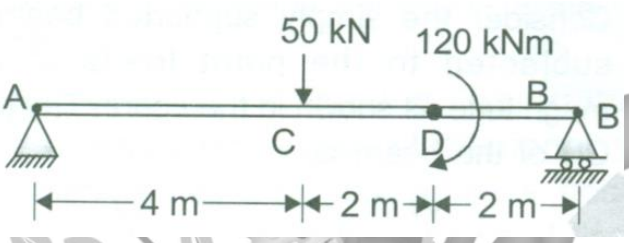


The magnitude of reaction at R will be zero if the value of load
'W' is

a. **2 kN**
b. **2.5 kN**
c. **3 kN**

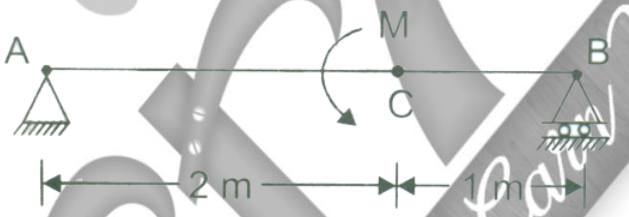
d. **6**

Q 16 **The beam shown in the figure given below is subjected to concentrated load and clockwise couple. What is the vertical reaction at A?**



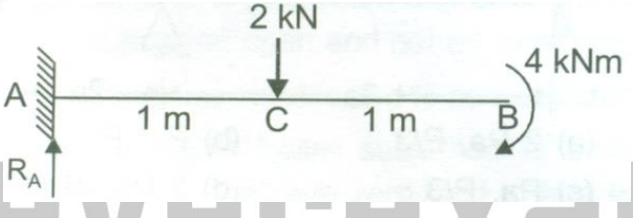
a. **10 kN**
b. **40 kN**
c. **50 kN**
d. **30 kN**

Q 17 **Couple M is applied at C on a simply supported beam AB. What is the maximum shear force the beam ?**

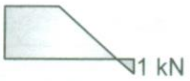


a. **Zero**
b. **M**
c. **2 M/3**
d. **M/3**

Q 18 **A cantilever beam AB carries loading as shown in figure below, which of the following is the SFD for the beam ?**



(a) 

(b) 

(c) 

(d)