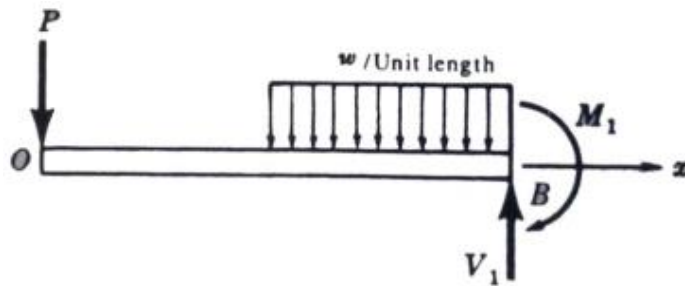


SHEAR FORCES AND BENDING MOMENTS

UNIT-II

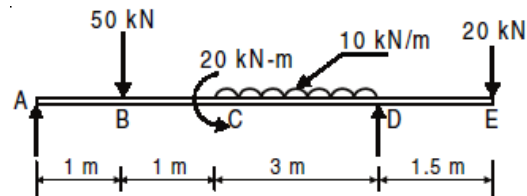
1. A simply supported beam of span, 9 m has UDL of 15 kN/m over 4 m from left support and a concentrated load of 20 kN at the centre. Draw SF and BMD
2. A beam of length 12 m. is supported at left end and the other support is at a distance of 8 m from left support leaving a overhanging length of 4 m on right side. It carries a UDL of 10 kN/m over the entire length and a concentrated load of 8 kN at the right extreme end. Draw BM and SF diagram and find the position of contra flexure point.
3. A cantilever beam loaded by a concentrated load at the free end together with a uniform load distributed over the right half of the beam. Plot the shear and moment diagrams As shown in fig



4. Draw the shear force and bending moment diagrams for the beam shown in figure



5. Draw the shear force and bending moment diagrams for the beam loaded and supported as shown in figure 2.

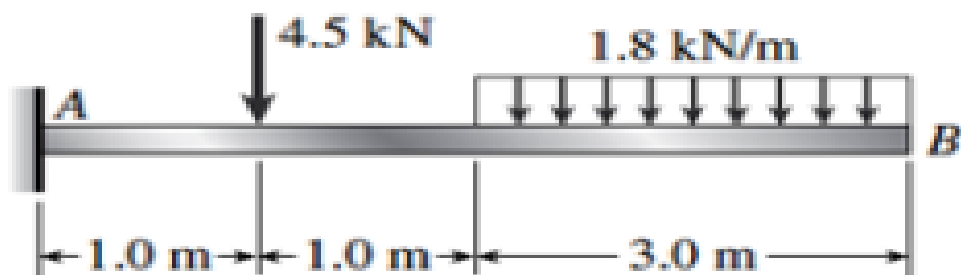


6. A horizontal beam 10 m long carries a uniformly distributed load of 100 N/m over its entire span and in addition a concentrated load of 200 N at the left end. The beam is supported at two points 8 m apart, so chosen that each support carries half the total load. Draw the shear force and bending moment diagrams.

7. A simply supported beam of span 10 m carry as UDL of 10 kN/m over a length of 3 m from left support and also from right support. Draw SF and BM diagram.

8. A beam of length 12 m has overhanging of 3 m on left and right leaving the span between the supports of 6 m. It carries UDL of 8 kN/m over the entire length and a concentrated load of 10 kN at the right extreme end. Draw SF and BM diagrams and find the point of contra flexure point.

9. A cantilever beam is loaded as shown in the figure 1. Plot the shear force and bending moment diagrams. Also find the reactions at the fixed support. What is the bending moment at a distance of 0.5 m from the fixed support?



10. Derive the relation between Shear Force, Bending Moment and rate of loading at a section of a beam.
11. The shear force diagram for a cantilever beam of length 3 m is varying linearly from a value of 12 N at the fixed end to a value of zero at the free end. Determine the loading on the cantilever beam.