Course Code: ESC106A
Course Title: Construction Materials and Engineering Mechanics

Lecture No. 28:
Problems on Beams

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Lecture Intended Learning Outcomes

At the end of this lecture, students will be able to:

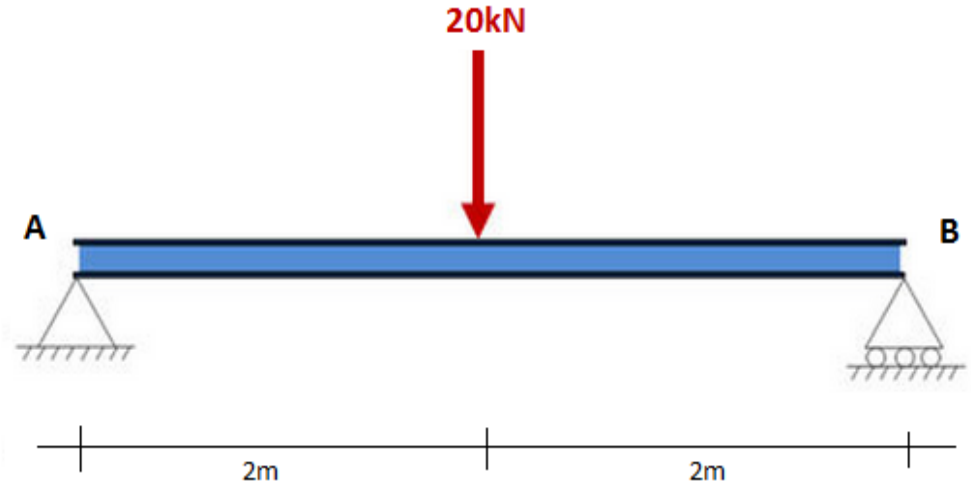
- Identify the type of support and support reactions
- Apply the conditions of equilibrium
- Calculate the reactions for the beams

Contents

Type of support, support reactions, problems on support reactions

Problems on Supports

1.Determine the reactions developed in the support in the beam as shown in the figure

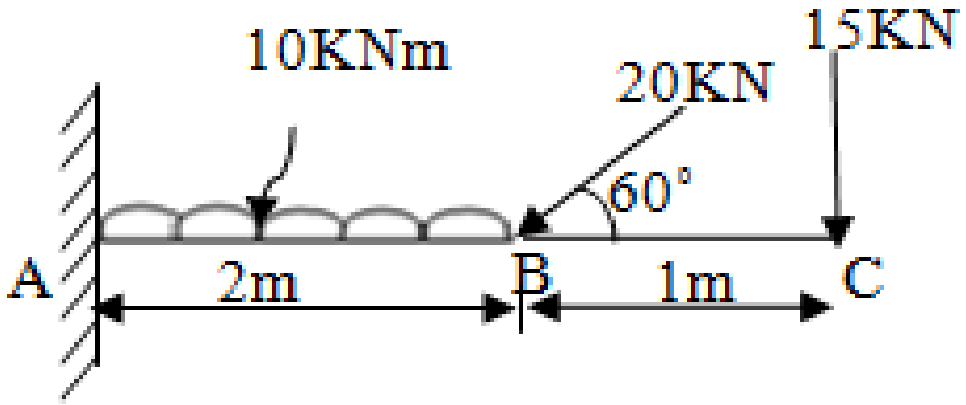


R_{AV}=10kN

R_{BV}=10kN

Problems on Supports

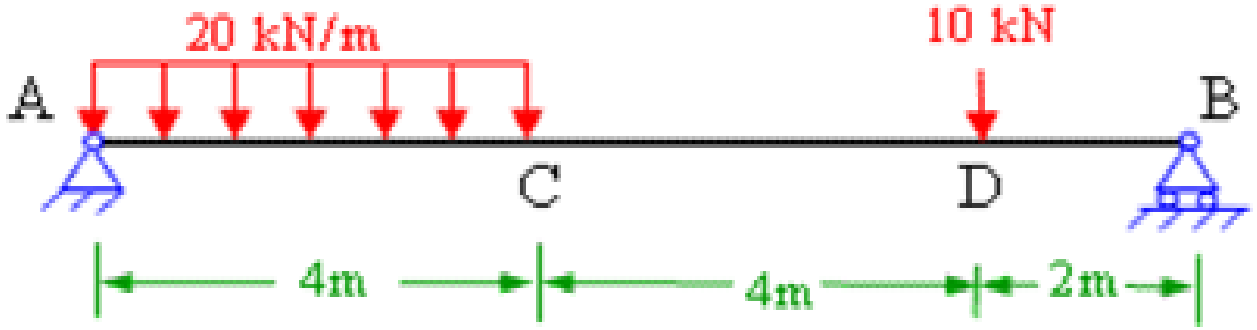
2.Determine the reactions developed in the support in the beam as shown in the figure



R_{AH}=10kN
R_{AV}=52.32kN
M_A=99.64KNm

Problems on Supports

3.Determine the reactions developed in the support in the beam as shown in the figure

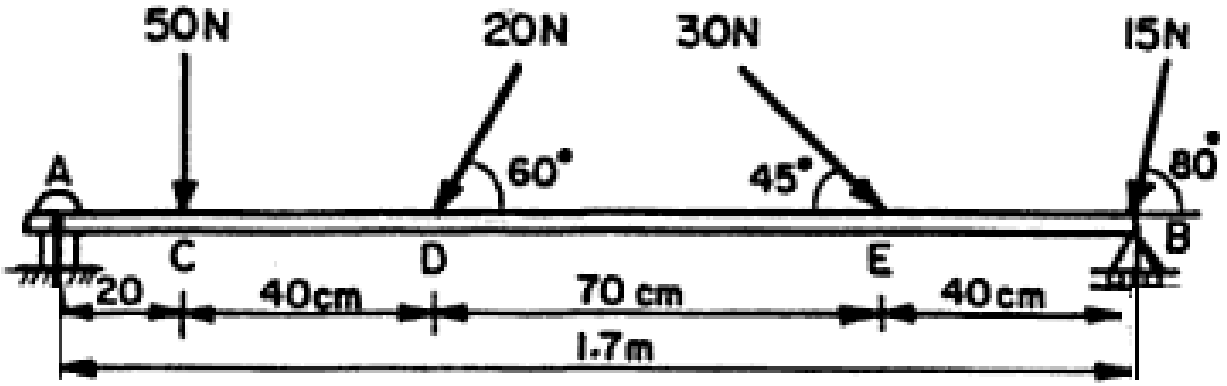


R_{AV}=66kN

R_{BV}=24kN

Problems on Supports

4.Determine the reactions developed in the support in the beam as shown in the figure . A has a hinged support.



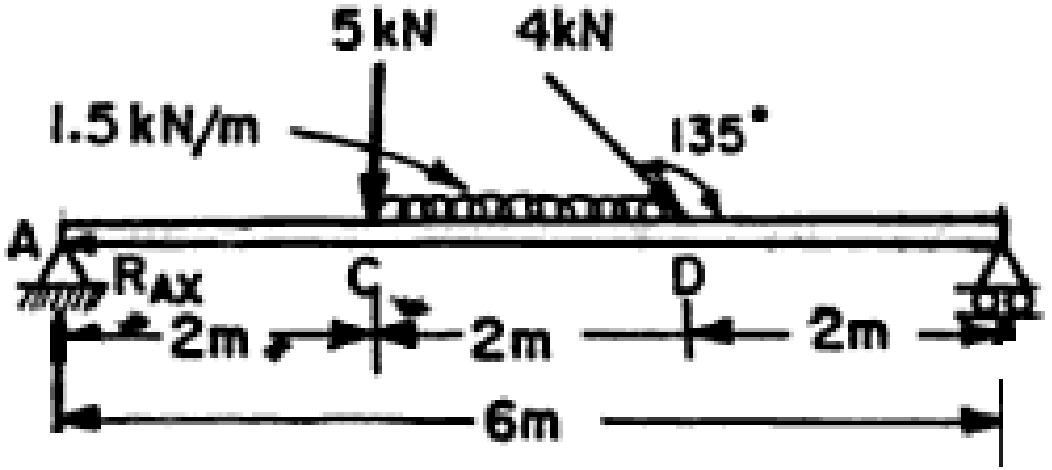
R_{AH}=-8.61kN

R_{AV} = 60.32kN

R_{BV}= 42.98kN

Problems on Supports

5.Determine the reactions developed in the support in the beam as shown in the figure



R_{AH}=2.828kN
R_{AV}=5.776kN
R_{BV}=5.052kN

Summary

- Based on the types of supports and the type of loading, the reactions developed in each support can be calculated