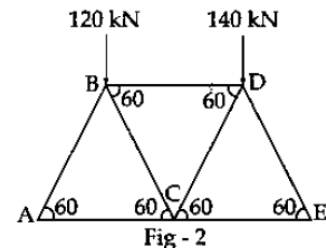## Problems Based on Trusses

2005–2006 (Sem. I) (TME101)

1. How the trusses are classified? What assumptions are made while determining stresses in truss?
2. Each member of following truss given in Fig 2. is 2 m long. The truss is simply supported at the ends. Determine forces in all members clearly showing whether they are in tension or compression.


Fig - 2

2005–2006 (Sem. II) (TME201)

1. Define a Truss and differentiate between Perfect, Deficient and Redundant Trusses.
2. A truss having a span of 6 m, carries a load of 30 kN and is shown in figure. Find the forces in members, *AB*, *AC*, *BC* and *AD*.
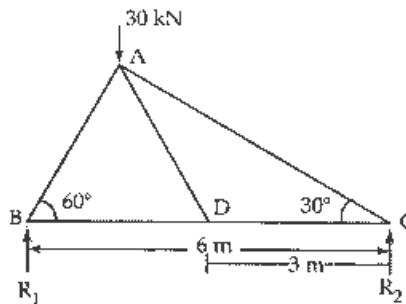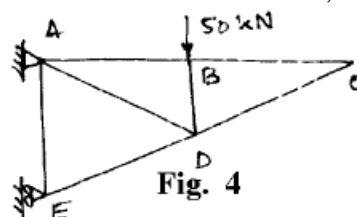

2006–2007 (Sem. II) (TME201)

1. Define and differentiate between a perfect, deficient and redundant truss.
2. Determine the magnitude and nature of forces with the members of truss shown in fig.
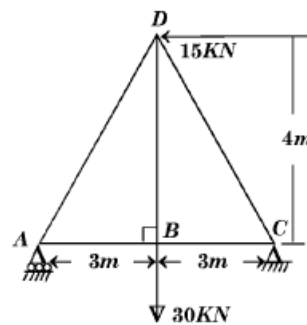
2006–2007 (Sem. II) (ME202)

1. Differentiate between an imperfect truss, perfect truss and redundant truss.
2. For the given truss find the forces in members *BC*, *CD* and *BD*.
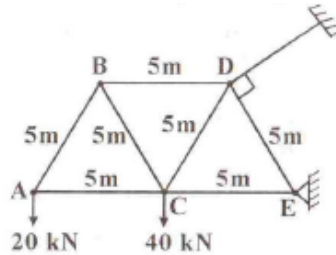

Fig. 4

2006–2007 (Sem. I & II) (TME101/TME201) [SCOP]

1. What are the different types of trusses? What are the methods used in the analysis of the trusses?
2. Classify the trusses and explain.

2007–2008 (Sem. I) (TME101)

1. Determine the forces in each member of the loaded cantilever truss by the method of joints.

2. What are the assumptions taken for the analysis of trusses? Explain the logic of each assumption.
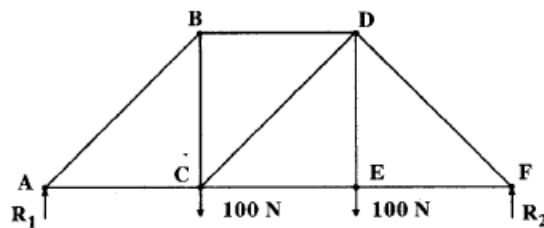
2007–2008 (Sem. II) (TME201)

1. How are the trusses classified? What are the assumptions taken while analysing a plane truss?
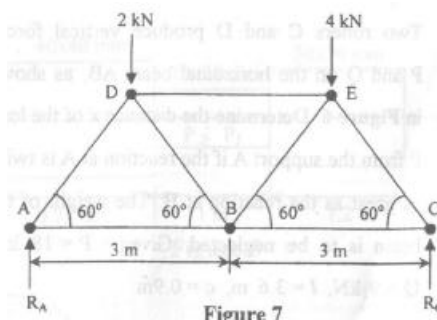2. Determine the forces and their nature in each member of the truss loaded as shown in Fig.
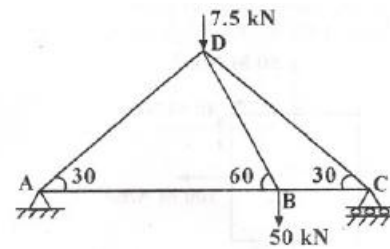
2008–2009 (Sem. I) (EME102)

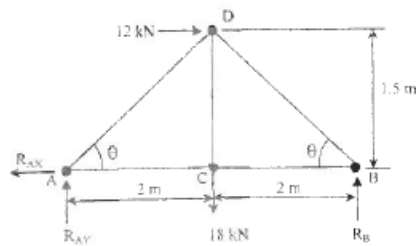1. For the truss shown in figure, find the force in the members.

2008–2009 (Sem. II) (EME202)

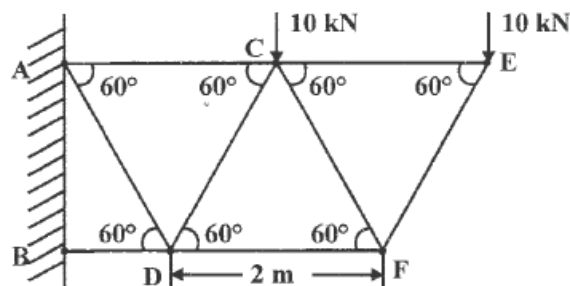1. Find the axial forces in all members of a truss as shown in Figure.

Figure 7
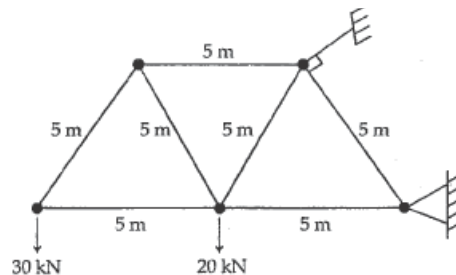

2009–2010 (Sem. I) (EME102)

1. Find the forces in all members of a truss as shown in Fig which carries a horizontal load of 12 kN at point *D* and vertical load of 18 kN at point *C*.
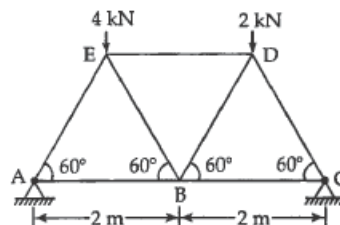

2009–2010 (Sem. I) (TME101) [COP]

1. For the truss shown in figure, find the force in the members, *AC*, *AD*, and *BD*.

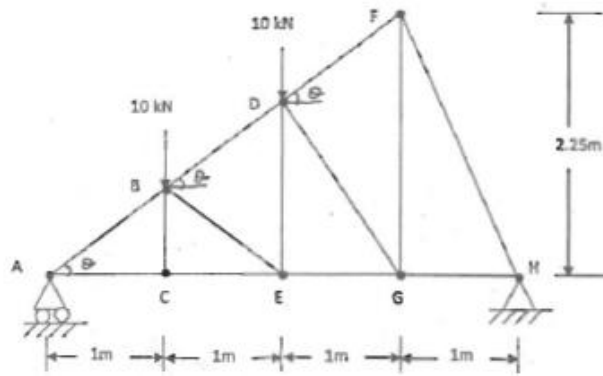**2009–2010 (Sem. II) (EME202)**

1. Find the axial forces in all members of a truss as shown in Figure.

2009–2010 (Sem. II) (TME201) [COP]

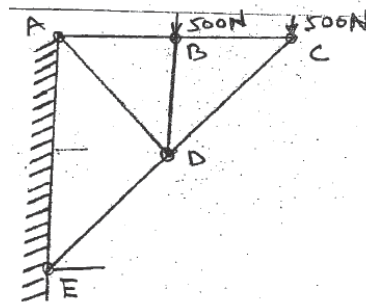1. For the truss shown in figure, find the force in the members.

2010–2011 (Sem. I) (EME102)

1. For the simply supported truss shown in figure. Find the forces in the members *BD*, *DE*, *EG*, and *CE*.
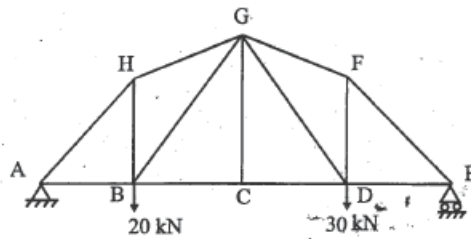
2010–2011 (Sem. I) (TME101) [COP]

1. For the truss shown in figure, find the force in the members. $AB = BC = 1$ m, $AE = 2$ m, $BD = 1$ m.
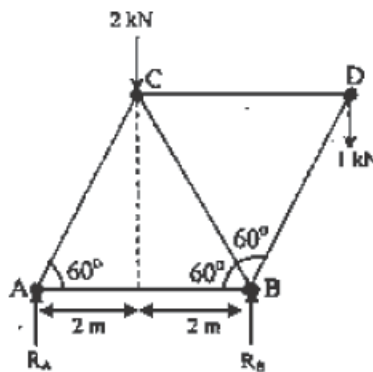

2010–2011 (Sem. II) (EME202)

1. For the truss shown in figure, find the force in the members: $AB = BC = CD = ED = BH = DF = 3$ m, $CG = 4$ m.
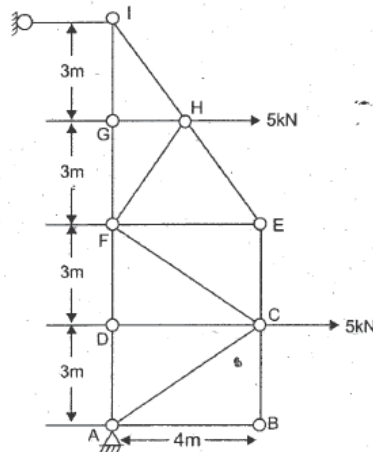

2010–2011 (Sem. II) (EME202) (MTU)

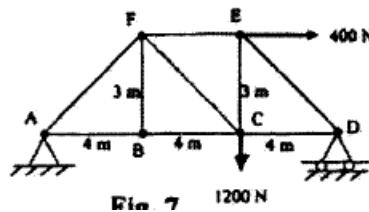1. A truss is loaded as shown in Fig. Find the reactions and forces in the members of truss.


2010–2011 (Sem. II) (TME201) [COP]

1. For the truss shown in figure, find the force in the members *HE*, *FH*, *FE* and *FC*.
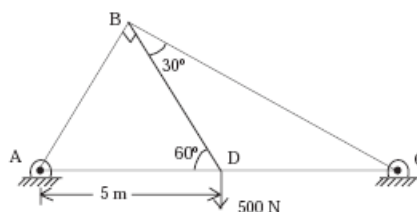

2011–2012 (Sem. I) (EME102)

1. For perfect truss give the relationship between number of members and number of joint.
2. Determine the force in members *FE*, *FC* and *BC* of the truss shown in Fig.

Fig. 7

2011–2012 (Sem. I) (EME102) (MTU)

1. What are the assumptions made in the analysis of a simple truss?
2. Determine the forces and their nature in each member of truss loaded as shown in Fig.
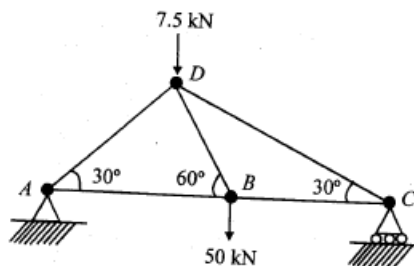

2011–2012 (Sem. II) (EME202/EME102)

1. List the assumptions made in the analysis of a Truss.
2. A truss is loaded as shown in Fig. Find the reactions and forces in each members.

2011–2012 (Sem. II) (EME202) (MTU)

1. The roof truss shown in Fig. is supported at *A* and *B* and carrier vertical loads at each of the upper chord points. Using the method of sections determine the forces in the member *CE* and *FG* of truss.
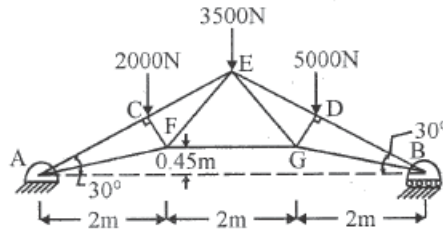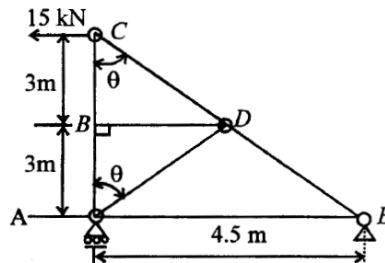

2012–2013 (Sem. I) (EME102)

1. A joint of truss is connected by 3 members. No external force acts at the joint. Two of the members are collinear and third is inclined to them. Determine the relation between the forces in the members which are collinear.
2. Determine forces in all the members of truss shown below in Fig. All the horizontal members are 3 m long and vertical members 2 m long.
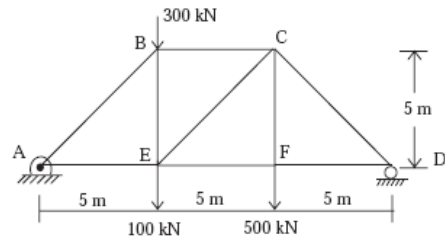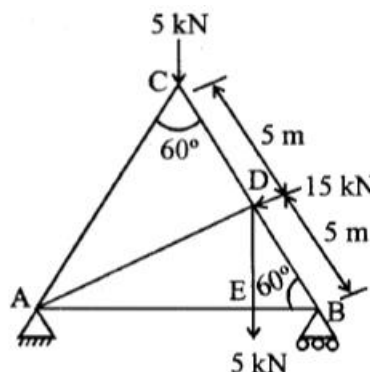

2012–2013 (Sem. I) (ME101) (MTU)

1. Give the methods used to analyze plane truss.
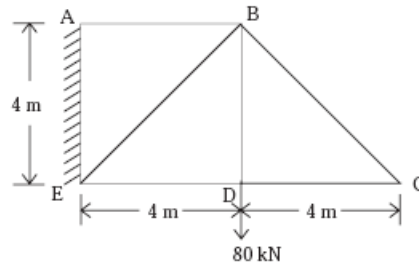2. Determine the force in all the members of the truss shown in Fig.

2012–2013 (Sem. I) (EME102) (MTU) [COP]

1. Find the forces in member *AD*, *CD* and *AE* of a truss as shown in Fig, by method of section.
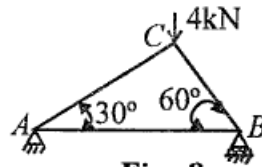

2012–2013 (Sem. I) (TME101) [COP]

1. Find the forces in each member of the cantiliver truss as shown in Fig.


2012–2013 (Sem. II) (ME201) (MTU)

1. Determine the magnitude and nature of forces in all members of the truss shown in Fig.


2012–2013 (Sem. II) (TME201) [COP]

1. Define and differentiate between a perfect, deficient and redundant truss.
2. Determine the magnitude and nature of forces with all the members of the truss shown in fig.
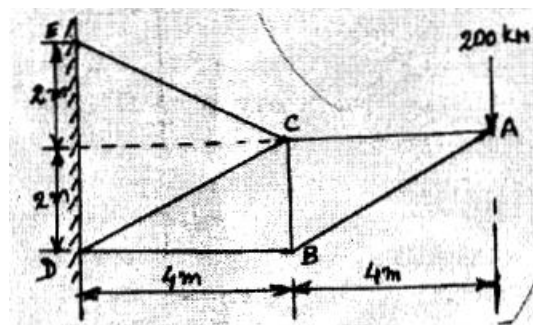
2013–14 (Sem. I) (NME102)

1. Discuss the conditions under which the method of section is preferred over method of joints in analysis of truss.
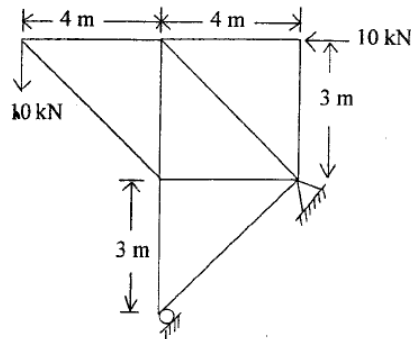2. Determine the forces in the truss shown in figure.
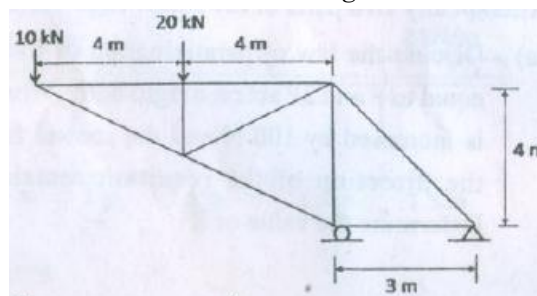
2013–14 (Sem. I) (EME102/EME202) [COP]

1. When do you prefer method of section over method of joint for analysis of a truss problem?
2. Determine the forces in all the members of the following truss Fig.
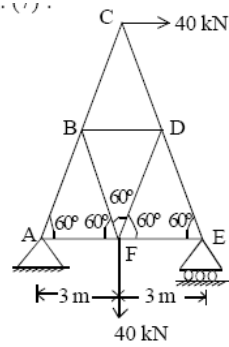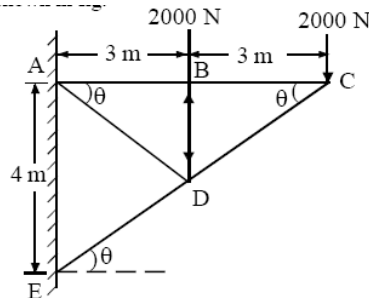

2013–14 (Sem. I) (ME101) [COP]

1. What is perfect truss? How it differ from an imperfect truss?
2. Determine the forces in each member of the truss as shown in figure.

2013–14 (Sem. I) (TME101) [COP]

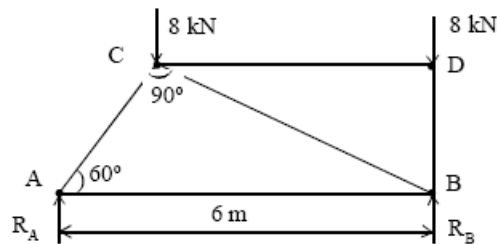1. Determine the forces in all the member of a cantilever truss shown in fig.

2013–14 (Sem. II) (NME202)

1. A truss structure is made up of five members. If the number of joints in the truss is four then state the nature of truss.
2. Using method of joint determine the forces in each member of the truss shown in figure:
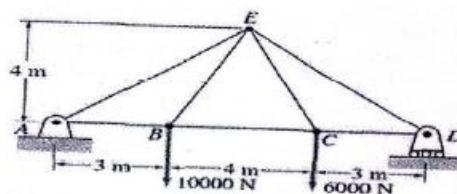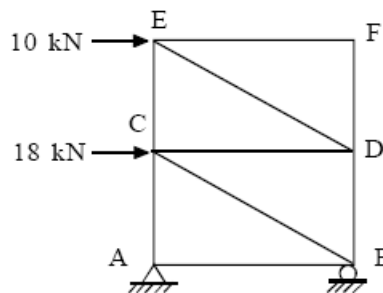
2013–14 (Sem. II) (EME202) [COP]

1. Describe the method of section for analysis of truss.
2. Determine the forces in various members of truss by method of joints:

2013–14 (Sem. II) (ME201) [COP]

1. Why are members of a truss two-force members (Tensile or compressive)? Explain.
2. Find the forces in members *EC*, *CD* and *BD* of the truss as given in figure:

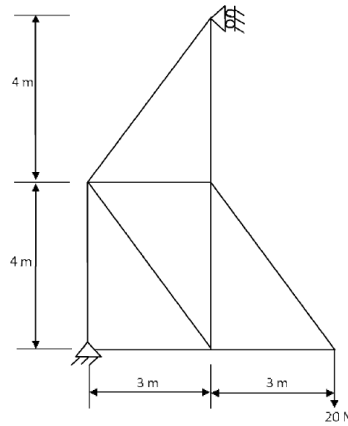**2014–15 (Sem. I) (NME102)**

1. Determine the force in each member of the simple equilateral truss.
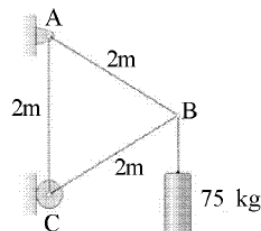
2014–15 (Sem. I) (EME102) [COP]

1. State and explain the Method of Joints to calculate the forces in each member of a truss.

2014–15 (Sem. I) (ME101) [COP]

1. What do you understand by terms: (i) Perfect frame (ii) Imperfect frame.
2. Determine the forces in all members of truss system as shown in figure and indicate the magnitude and nature of forces on the diagram of truss.
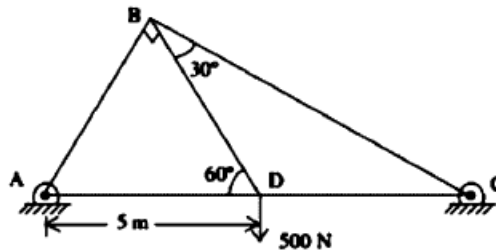
2014–15 (Sem. II) (NME202)

1. What assumptions are made while determining stresses in a truss?
2. Determine the forces in all members of the truss as shown in fig.
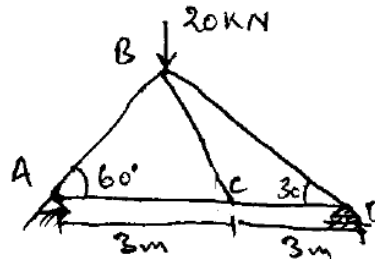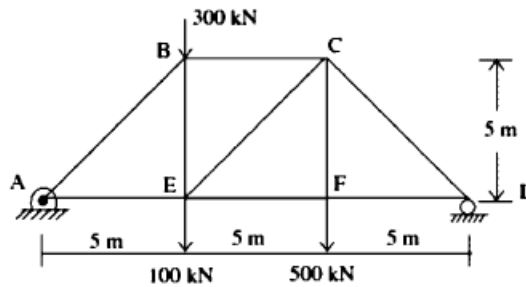

2014–15 (Sem. II) (EME202) [COP]

1. List the assumptions made in analysis of truss.
2. Find the reaction and forces in the each member of given truss.

3. Determine forces in all the members of truss shown below in figure. All the horizontal members are 3 m long and vertical members 2 m long.
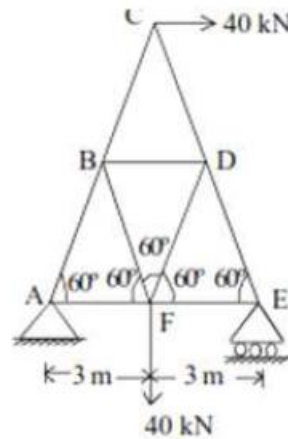

2014–15 (Sem. II) (ME201) [COP]

1. What is a deficient and redundant truss?
2. Discuss the assumption made in analysis of truss.
3. Determine the forces in members of the truss shown in figure. State if the members are in tension or compression.
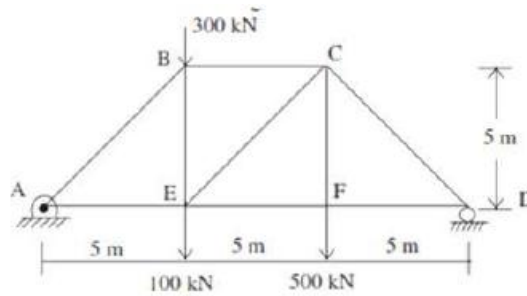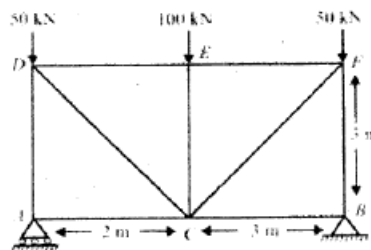

4. Determine the forces in all the members of the following truss given in figure.
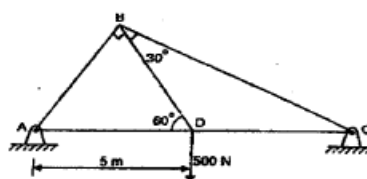

2014–15 (Sem. I) (NME202/NME102/EME202/EME102) [SCOP]

1. What is truss? Explain its types.
2. Determine the magnitude and nature of forces in all members of the truss shown in figure.

2015–16 (Sem. I) (NME102)

1. Differentiate between perfect and imperfect truss.
2. Compute the forces in all the members for the given truss as shown in figure. Distance between *A* and *C* is 12 m.
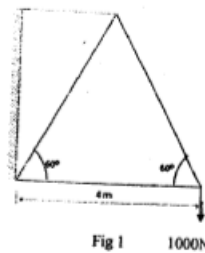
2015–16 (Sem. I) (EME102) [COP]

1. Write down the assumptions in truss analysis.
2. Find out axial forces in all the members of truss Fig.
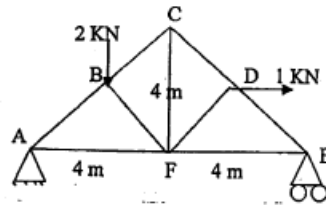
2015–16 (Sem. I) (ME101) [COP]

1. State the assumptions made in the analysis of pin jointed trusses.
2. Name various types of trusses.
3. Find the forces in all the members of cantilever truss loaded 1000 N as shown in fig.

Fig 1   1000N

2015–16 (Sem. II) (NME202)

1. Write down the assumptions taken during analysis of truss.
2. Analyze the truss as shown in figure. And find magnitude and nature of forces in each member of truss.
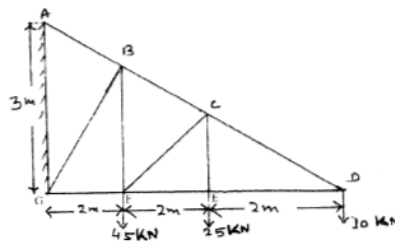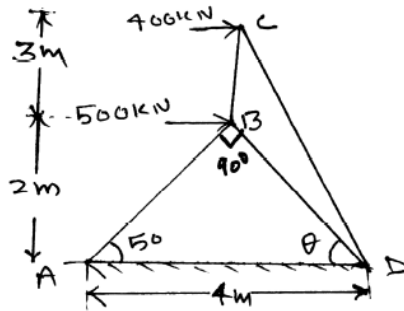

2015–16 (Sem. II) (EME202) [COP]

1. Analyze the truss as shown in fig and calculate the magnitude and nature of forces in each member of truss.
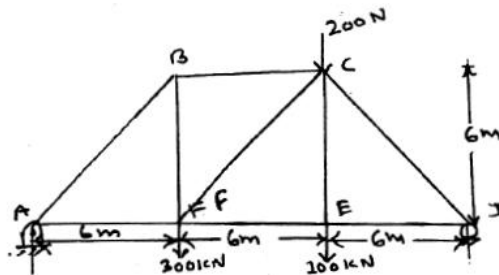
2015–16 (Sem. II) (ME201) [COP]

1. Find the forces in all members of truss as shown in below fig. using Method of Joints.
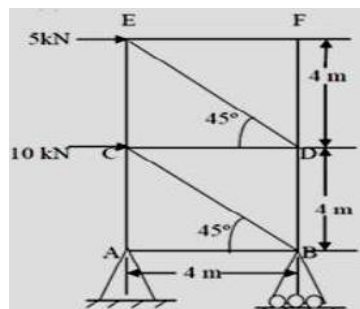

2016–17 (Sem. I) (RME101)

1. Determine the forces in all member of the truss shown in fig, and indicate the magnitude and nature of forces on the diagram of the truss. All inclined members are at 60° to horizontal and length of each member is 2 m.
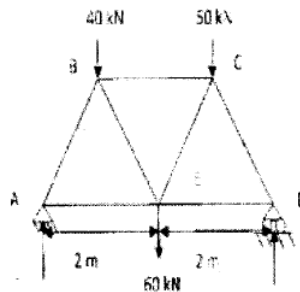
2016–17 (Sem. II) (RME201)

1. Differentiate between perfect, imperfect and redundent truss.
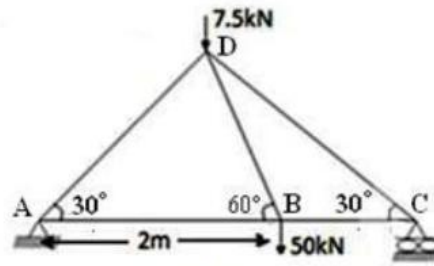2. Determine the forces in all the members of the truss shown in fig, below.

2016–17 (Sem. II) (NME202/EME202/ME201) [COP]

1. Give the methods used to analyze the truss.
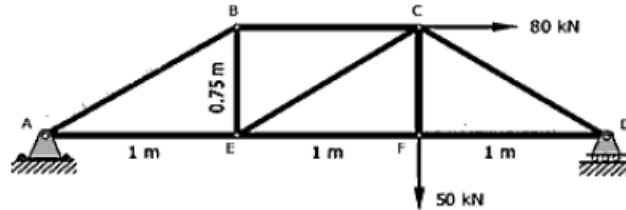2. Differentiate between perfect, imperfect and redundant truss.

2017–18 (Sem. I) (RME101)

1. Differentiate perfect and imperfect truss?
2. Define truss. Write down the assumptions taken while analyzing a truss.
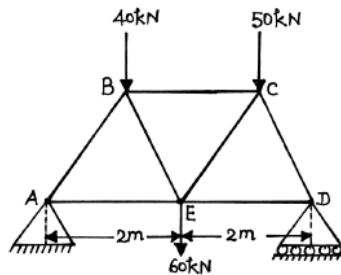3. Determine the forces in each member of the truss as shown in Fig.

2017–18 (Sem. I) (NME102/EME102) [COP]

1. Find the force in each member of the truss in shown in figure.
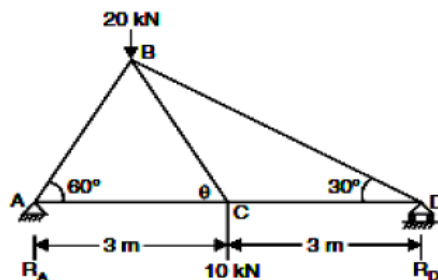

2017–18 (Sem. II) (RME201)

1. Define truss, types of truss and write down the assumptions taken while analyzing a truss.
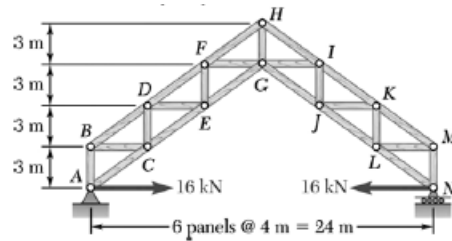2. Determine the forces in each member of the truss as shown in figure.

2017–18 (Sem. II) (NME202) [COP]

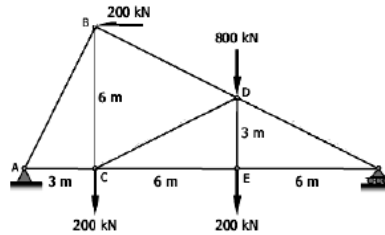1. Find forces in all members of the truss as shown in figure.


2017–18 (Sem. II) (EME202) [COP]

1. Determine the force in members *GI*, *GJ*, and *HI* of the truss shown.
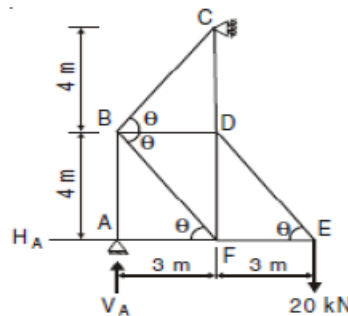
2018–19 (Sem. I) (RME101)

1. What are the assumptions in analysis of truss?
2. Find the axial forces in all members of the truss as shown in fig.
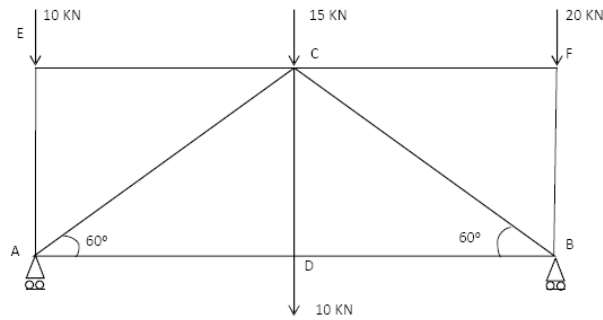

2018–19 (Sem. I) (NME102/EME102) [COP]

1. Write down the assumptions in truss analysis.
2. Find out axial forces in all the members of truss. All sides of truss are 5m. Also find out tension in rope.
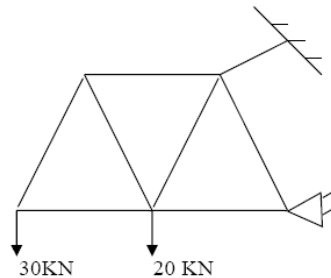
2018–19 (Sem. II) (RME201)

1. Find the forces in all members of the truss as shown in fig.

2018–19 (Sem. II) (NME202/EME202) [COP]

1. Explain the terms: Perfect frame, imperfect frame, deficient frame and redundant frame.
2. A truss of span AB = 6 m and loaded as shown in fig. Find reactions and forces in the members of the truss.

2019–20 (Sem. I) (RME101)

1. A Truss is shown in figure. Find the forces in all the members of the truss with their nature.
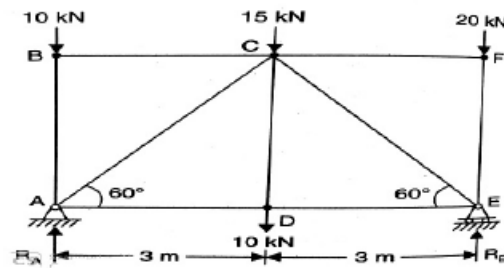
2019–20 (Sem. I) (NME102/EME102) [COP]

1. A truss of span AB = 6 m and loaded as shown in fig. Find reactions and forces in the members of the truss.