PRESIDENCY UNIVERSITY, BENGALURU
SCHOOL OF ENGINEERING

Max Marks: 30   Max Time: 55 Mins   Weightage: 15 %

Set A

TEST 2

II Semester 2016-2017   Course: CE A 202 Structural Analysis   17 April 2017

Instructions:
  i.   Write legibly and draw clear diagrams wherever required.
  ii.   Scientific and non-programmable calculators are permitted.

Part A

(1 Q x 8 M= 08 Marks)

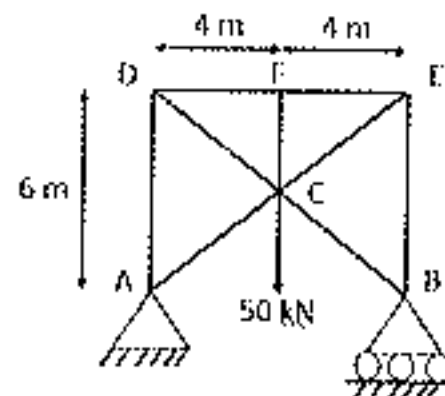1. Analysis the given Truss system shown in Figure 1 by the method of joints.

Figure 1

Part B

(1 Q x 10 M= 10 Marks)

2. A symmetrical three-hinged parabolic arch has a span of 24 m and central rise of 4m. It is subjected to a UDL of 20 kN/m for a length of 9 m starting from left hand support. Draw the Bending Moment Diagram showing the position of maximum positive and negative bending moment with its magnitude.

Part C

(1 Q x 12 M= 12 Marks)

3. Analyse the continuous beam shown in Figure 2 by Moment Distribution Method. Draw Bending Moment Diagram (BMD) and Shear Force Diagram (SFD).
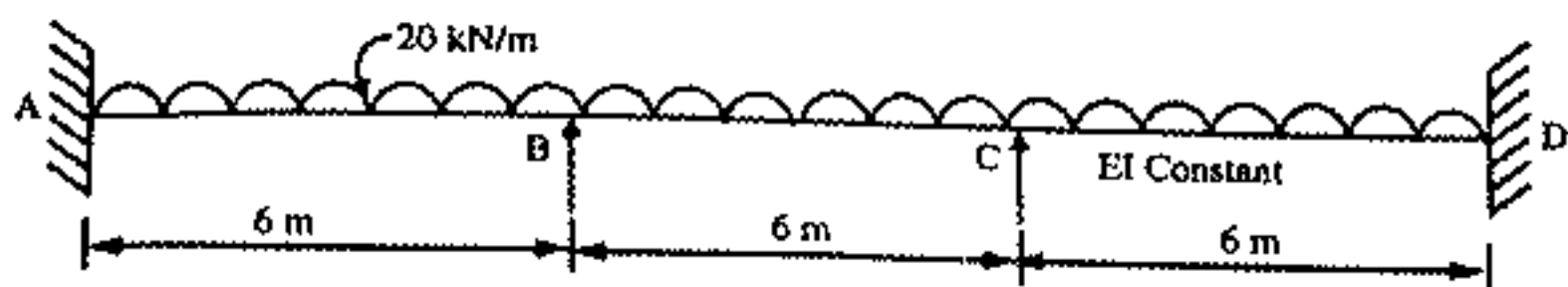

Figure 2

Max Marks: 30   Max Time: 55 Mins   Weightage: 15 %   **Set A**

TEST 2

II Semester 2016-2017   Course: **CE A 202 Structural Analysis**   20 March 2017

Instructions:
   i.   Write legibly and draw clear diagrams wherever required.
   ii. Scientific and non-programmable calculators are permitted.

Part A

(2 Q x 5 M= 10 Marks)

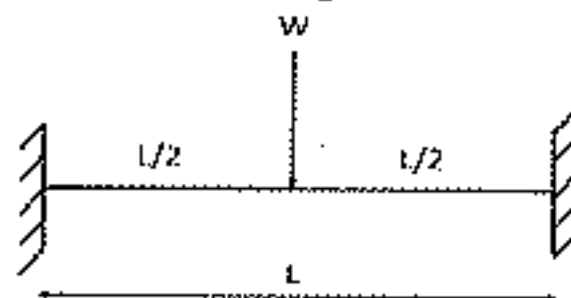1. Find the deflection for a fixed beam shown in figure 1.

Figure 1

2. Express the deflection obtained in Question 1 it in terms of simply supported deflection.

Part B

(1 Q x 8 M= 8 Marks)

3. A beam of length 16 m consists of spans AB and BC each of 8m long and is simply supported at A, B and C shown in figure 2. The beam carries a uniformly distributed load of 40 kN/m on the whole length. Find the reactions at the supports and the support moments by Clapeyron's Theorem of Three Moments. Draw the Shear Force Diagram.
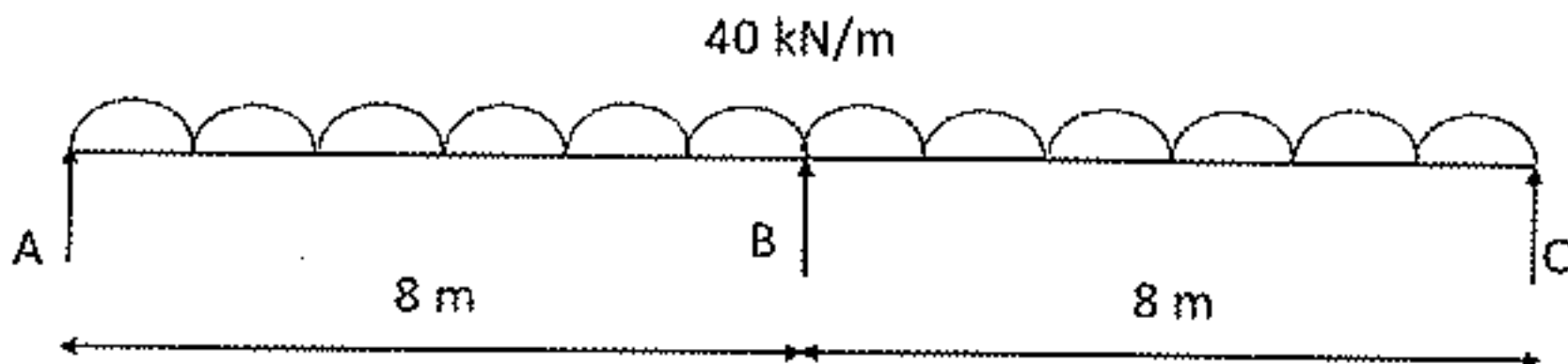

40 kN/m

Figure 2

4. Analyse the continuous beam shown in figure 3 by slope deflection method. Draw Bending Moment Diagram (BMD) and Shear Force Diagram (SFD).
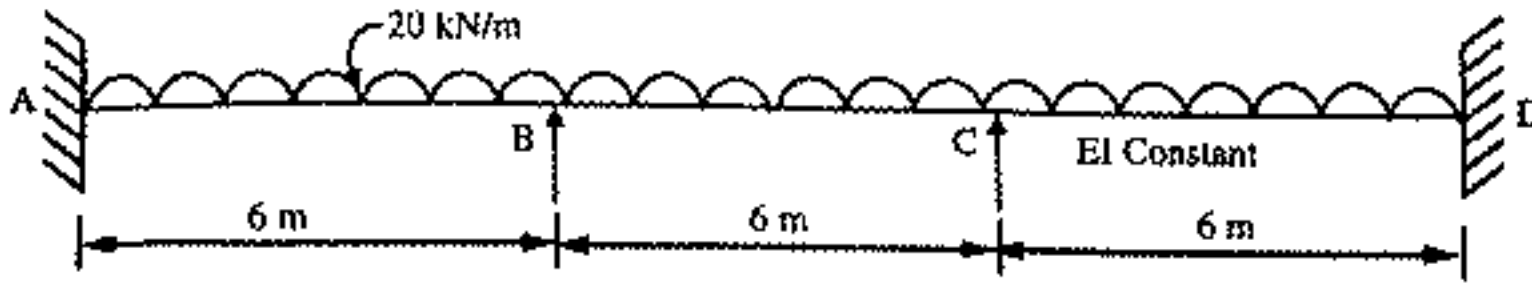

Figure 3

PRESIDENCY UNIVERSITY, BENGALURU
SCHOOL OF ENGINEERING

Max Marks: 30   Max Time: 55 Mins   Weightage: 15 %   **Set A**

TEST 1

II Semester 2016-2017   Course: **CE A 202 Structural Analysis**   20 February 2017

Instructions:

   i.   Write legibly

  ii.   Scientific and non programmable calculators are permitted


Part A

(4 Q x 2.5 M= 10 Marks)

1. List different types of beams with neat sketch.

2. What do you mean by statically determinate and indeterminate beams? Give examples for each one.

3. What do you mean by Shear force and Bending moment? Write down the relationship between shear force and bending moment.

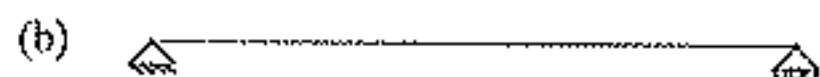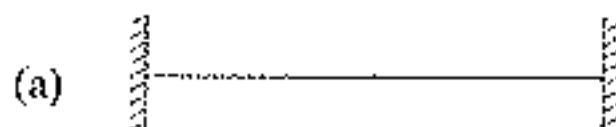4. Calculate the support reactions R_A and R_B for the beam given below.
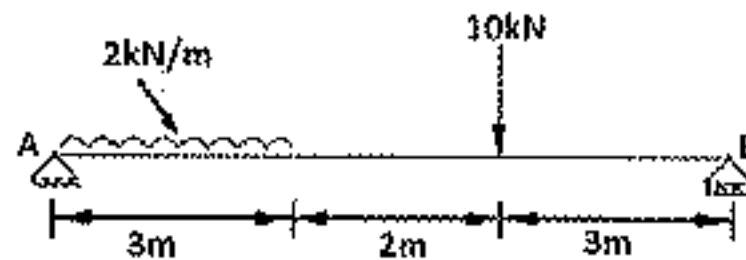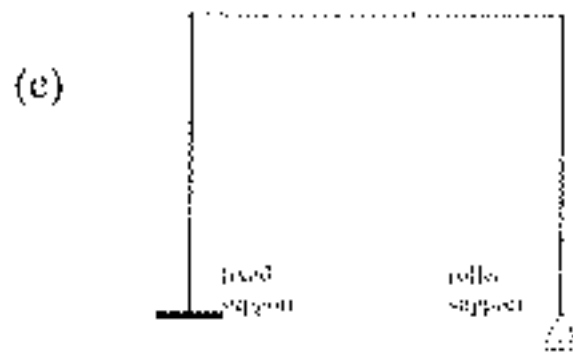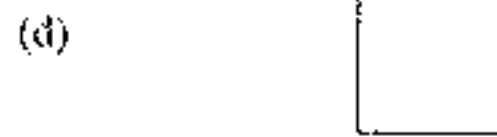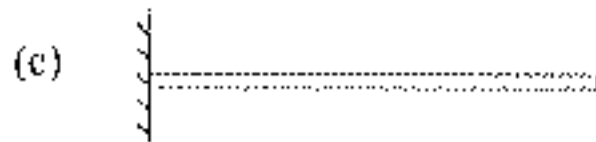

Part B

(2 Q x 5 M= 10 Marks)

5. Draw the Shear Force Diagram and Bending Moment Diagram for the beam given below.
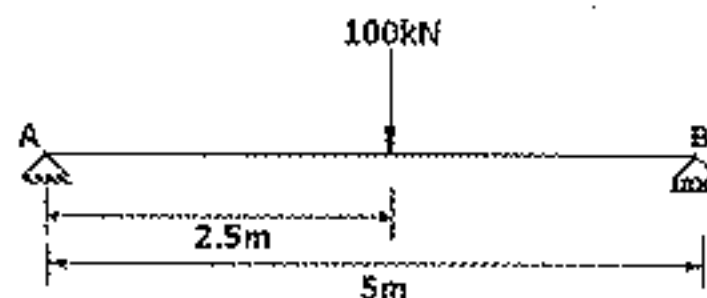
6. Find the degree of static indeterminacies for the structures given below.

(c)

(d)

(e)

fixed   roller
support   support

Part C

7. Find the support reactions R_A and R_B at the support A and B for the propped cantilever beam given below.