53 (CE 503) STAN

2013

(December)

STRUCTURAL ANALYSIS

Paper : CE 503

Full Marks : 100

Pass Marks : 30

Time : Three hours

The figures in the margin indicate full marks for the questions.

*Answer **any five** questions out of **seven.***

1. Analyse the fixed beam shown in *figure1* and draw BMD and SFD. 20

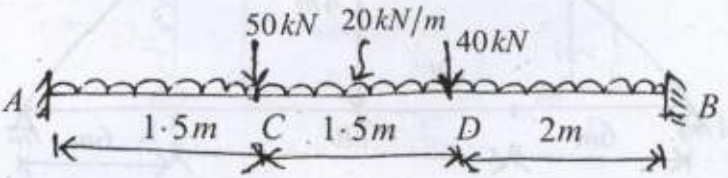

figure 1

Contd.

2. Using Clapeyron's theorem, analyse the three span continuous beam shown in *figure 2* and draw BMD and SFD. 20

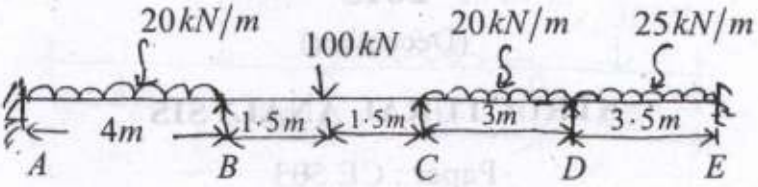

figure 2

3. A two-hinged arch is loaded as shown in *figure 3*. Determine :

   (a) Horizontal thrust and moments at different sections and draw BMD.

   (b) Radial shear and normal thrust at 5*m* from left support. 20

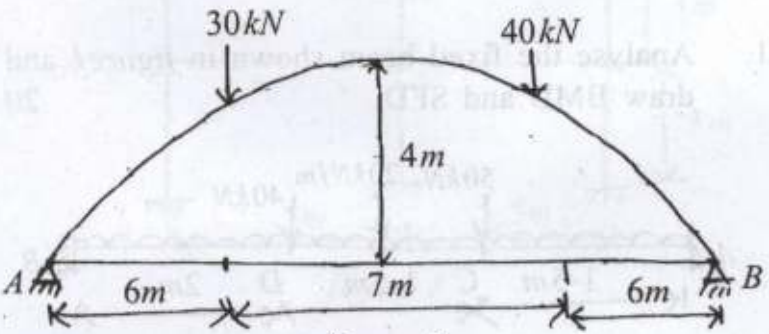

figure 3

4. Analyse the continuous beam shown in *figure 4* by moment distribution method and compare the values with 3 moments method. Assume *EI* is constant. 20

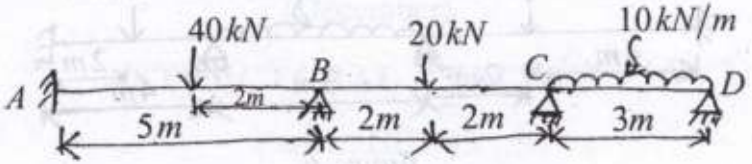

figure 4

5. Analyse the portal frame shown in *figure 5* by moment distribution method and draw BMD. 20

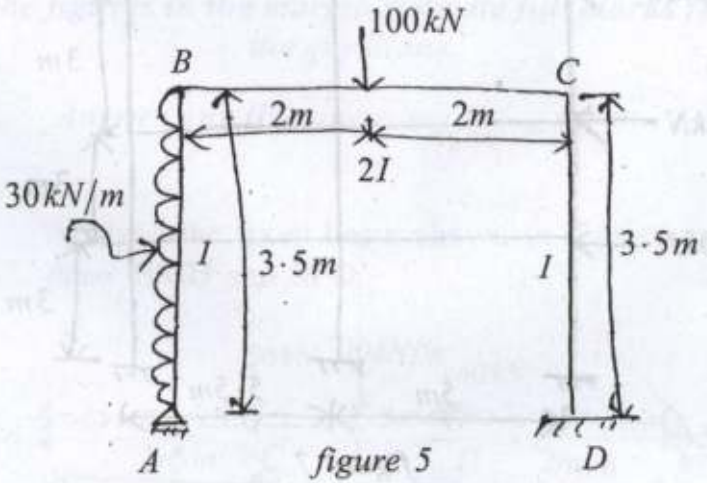

figure 5

6. Analyse the continuous beam shown in *figure 6* by Kani's method. 20

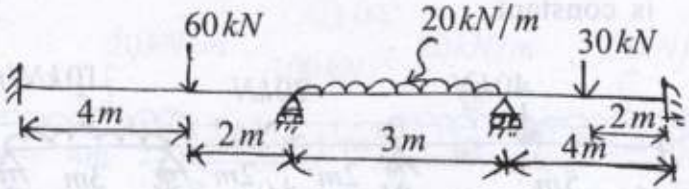

figure 6

7. Analyse the building frame shown in *figure 7* by portal method. 20

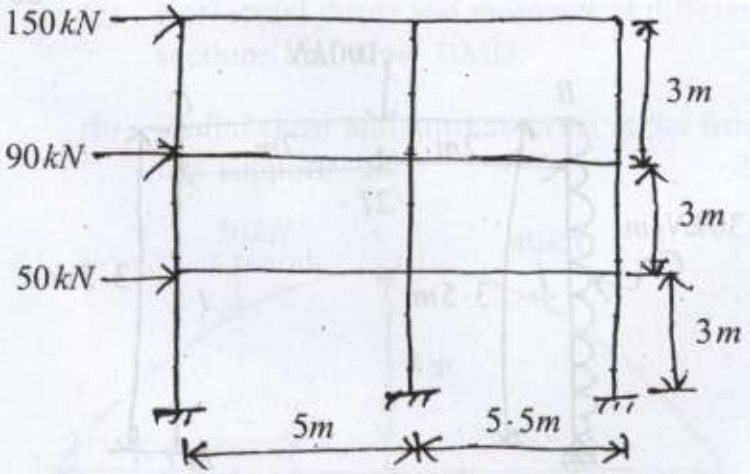

figure 7