

**B.TECH SEM – V (2007 COURSE) (CIVIL ENGG.) : SUMMER -
2018**

SUBJECT: STRUCTURAL MECHANICS – II

Day: **Friday**
Date: **25/05/2018**

S-2018-2658

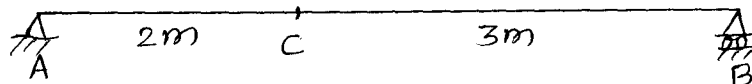
Time: **10.00 AM TO 01.00 PM**
Max Marks: 80

N.B. :

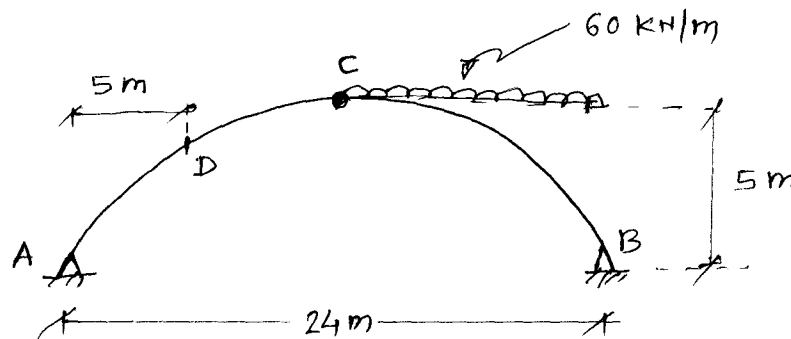
- 1) **Q.No.1 and Q.No.5 are COMPULSORY.** Out of the remaining questions attempt **ANY TWO** questions from each section.
- 2) Answers to both the sections should be written in **SEPARATE** answer books.
- 3) Draw neat and labeled diagrams **WHEREVER** necessary.
- 4) Figures to the right indicate **FULL** marks.
- 5) Assume suitable data if necessary.

SECTION – I

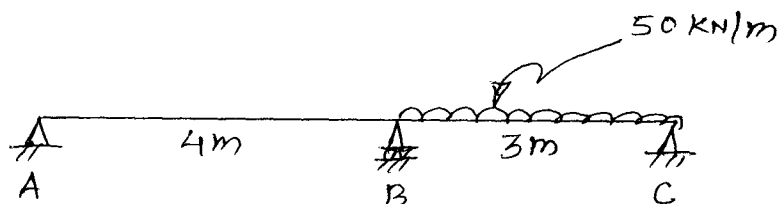
- Q.1** a) What is application of an I.L.D? [04]
b) What are different types of arches? [04]
c) What is flexibility matrix? [04]
- Q.2** An UDL of 50kN/m having length 10m moves over beam shown in figure. [14]
Calculate maximum support reactions, SF at 'C' and BM at 'C'.



- Q.3** For three hinged parabolic arch, calculate BM at 'D' [14]



- Q.4** Analyse the beam using flexibility matrix method. [14]

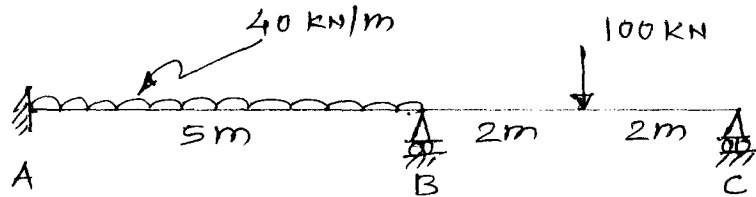


P.T.O.

SECTION – II

- Q.5 a) What is plastic hinge? [04]
 b) What is stiffness of the structure? [04]
 c) What are assumptions in portal method? [04]

Q.6 Calculate Plastic moment capacity of the cross section, if the beam is subjected to ultimate load. [14]



Q.7 Derive stiffness matrix for the beam element in plane. [14]

Q.8 Analyse the frame using cantilever method of analysis. [14]

