

PARUL UNIVERSITY
FACULTY OF ARCHITECTURE & PLANNING
B.Arch. / B. ID. Winter 2018-19 Examination

Semester: 5

Subject Code: 01101306

Subject Name: Structural Design & Analysis - III

Date: 14/12/2018

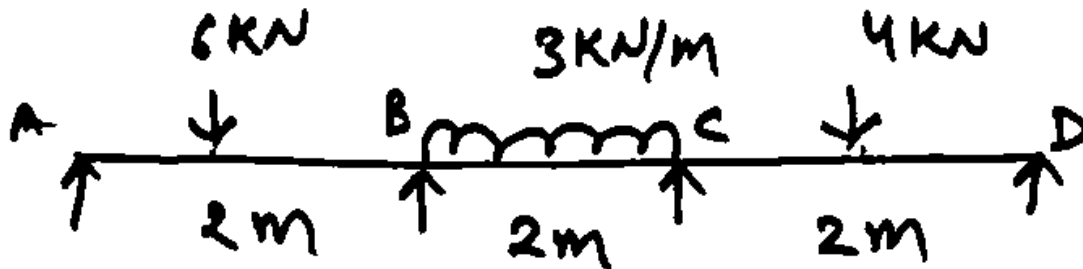
Time: 02:00pm to 04:00pm

Total Marks: 50

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever required.
4. Draw suitable sketches wherever required.

- Q.1** A three span continuous beam ABCD is simply supported on end, Find out B.M. and draw bending moment diagram for the beam. (10)



- Q.2** Attempt any **five** out of the following six: (20)

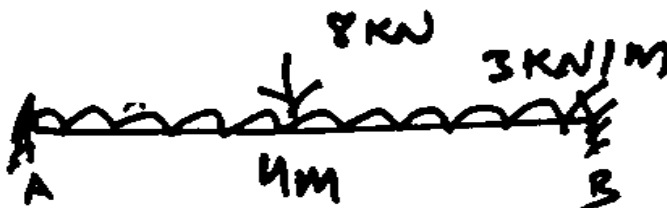
- 1) Explain the difference between determinate and indeterminate structure.
- 2) Explain the portal frames and three advantages of it in detail.
- 3) Define truss and types of truss, uses of truss in detail.
- 4) Explain assumption of Euler's theorem of long column.
- 5) Explain advantages and disadvantages of fixed beam.
- 6) A circular column having internal diameter of 60mm and thickness of 10mm. calculate slenderness ratio. Let length of column is 3.5m.

- Q.3** Answer the following: (any five) (10)

1. Slope of the beam
2. Deflection of the beam
3. Stiffness of beam
4. Carry over factor
5. Distribution factor
6. Radius of gyration

- Q.4** Answer the following: (any two)

1. A point load 8kN act exactly at **center** of on distance for 3m fixed beam, calculate BMD, SFD, POC by using moment area method. (10)
2. In a Fixed Beam: Calculate BMD, SFD, POC by using movement area method.



3. Explain type of arches and impact on architectural field.