JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- 2023

B.Tech-3rd Semester (CE)

COURSE CODE (CREDITS): **18B11CE315 (3)** MAX. MARKS: **25**

COURSE NAME: **Engineering Mechanics**

COURSE INSTRUCTORS: Dr. Saurav MAX. TIME: **1.5 Hour**

Note: *(a) All questions are compulsory.*

(b)Marks are indicated against each question in square brackets.

(c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

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Q1. A 2D plane truss is loaded and supported as shown in Fig 1. Determine the nature and magnitude of the forces in the members 1,2 and 3. **[5, CO2]**

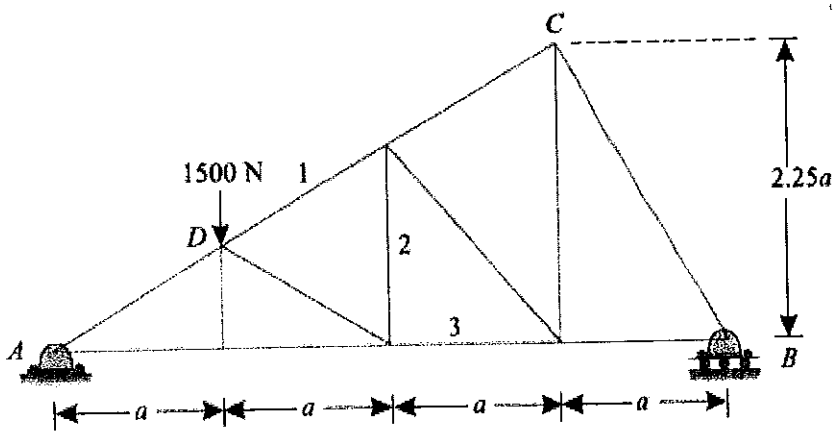

Fig. 1

Q2. A simply supported beam AB of span 6 m is loaded as shown in Fig. 2. Determine the reactions at A and B. **[5, CO1]**

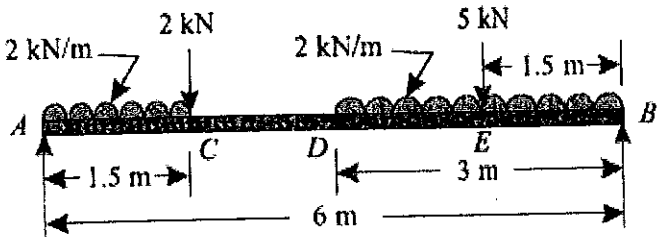

Fig. 2

Q3. A building frame is subjected to wind loads as shown in Fig 3. Determine the resultant of the loads and its location **[5, CO1]**

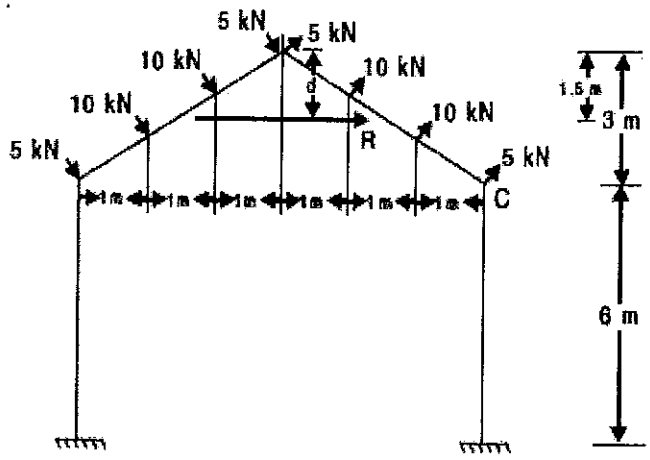

Fig. 3

Q4. Find the forces in all the members of the truss shown in Fig 4. Tabulate the results **[5, CO2]**

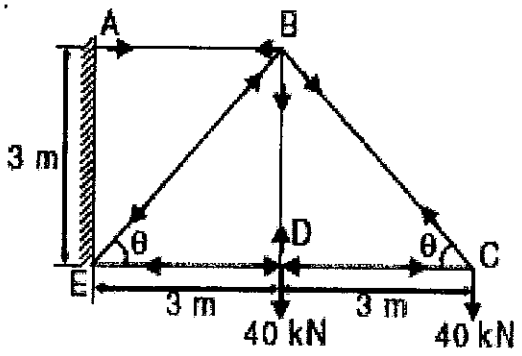

Fig. 4

Q5. What do you mean by a perfect frame and simplest perfect frame? Deduce an equation to determine the redundancy of a perfect pin jointed 2D frame. Explain it with fig. **[5, CO2]**