**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI**
**(MID SEMESTER EXAMINATION)**

**CLASS: BTECH** **SEMESTER : VII**
**BRANCH: CIVIL** **SESSION : MO/2025**

**SUBJECT: CE411 ADVANCED STRUCTURAL ANALYSIS**

**TIME: 02 Hours** **FULL MARKS: 25**

**INSTRUCTIONS:**
**1. The question paper contains 5 questions each of 5 marks and total 25 marks.**
**2. Attempt all questions.**
**3. The missing data, if any, may be assumed suitably.**
***4*. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates**

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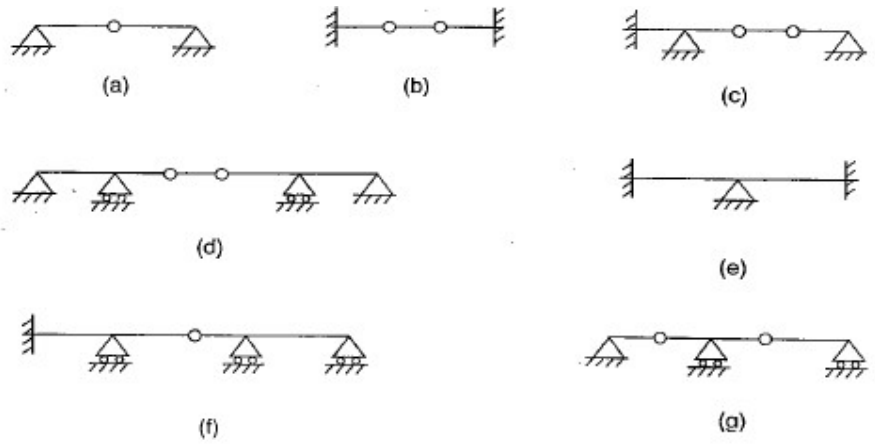
| | | | CO | BL |
|---|---|---|---|---|
| Q.1 | Which of the beams shown in Fig are the statically determinate? For those beams, calculate the degree of kinematic indeterminacy. | [5] | 1 | K1 |

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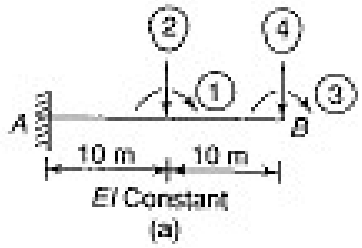
|---|---|---|---|---|
| Q.2 | Find the inverse of A matrix by Gauss Jordan method? $A=\begin{bmatrix}1 & 2 & 3\\ 0 & 1 & 4\\ 5 & 6 & 0\end{bmatrix}$ | [5] | 1 | K2 |
| Q.3 | Develop the stiffness matrix for the beam AB with reference to given coordinates | [5] | 1 | K2 |

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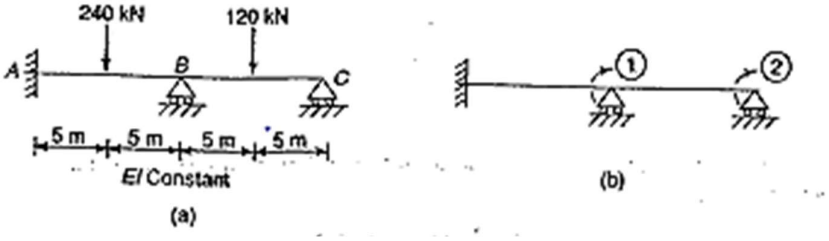
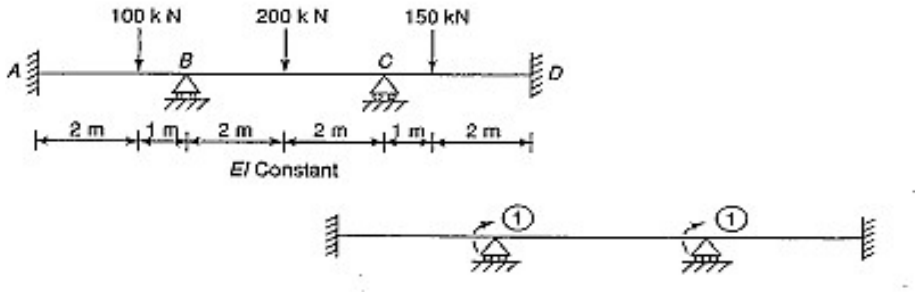
|---|---|---|---|---|
| Q.4 | Analyze the continuous beam shown in Figure given below. | [5] | 2 | K2 |




**PTO**

Q.5 Analyze the continuous beam shown in Figure given below [5] 2 K2

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