

CE8502 - STRUCTURAL ANALYSIS I

1. The number of independent equations to be satisfied for static equilibrium of a plane structure is

- a) 1
- b) 2
- c) 3
- d) 6

Ans: c

2. If there are m unknown member forces, r unknown reaction components and j number of joints, then the degree of static indeterminacy of a pin-jointed plane frame is given by

- a) $m + r + 2j$
- b) $m - r + 2j$
- c) $m + r - 2j$
- d) $m + r - 3j$

Ans: c

3. Number of unknown internal forces in each member of a rigid jointed plane frame is

- a) 1
- b) 2
- c) 3
- d) 6

Ans: c

4. Degree of static indeterminacy of a rigid-jointed plane frame having 15 members, 3 reaction components and 14 joints is

- a) 2
- b) 3
- c) 6
- d) 8

Ans: c

5. Degree of kinematic indeterminacy of a pin-jointed plane frame is given by

- a) $2j - r$
- b) $j - 2r$
- c) $3j - r$
- d) $2j + r$

Ans: a

6. Independent displacement components at each joint of a rigid-jointed plane frame are

- a) three linear movements
- b) two linear movements and one rotation
- c) one linear movement and two rotations
- d) three rotations

Ans: b