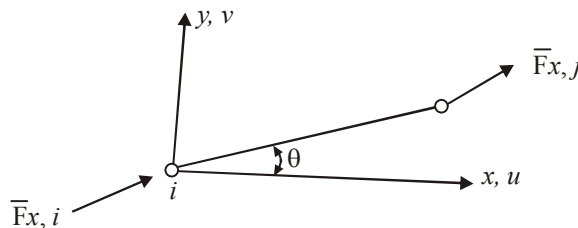


SECTION-B

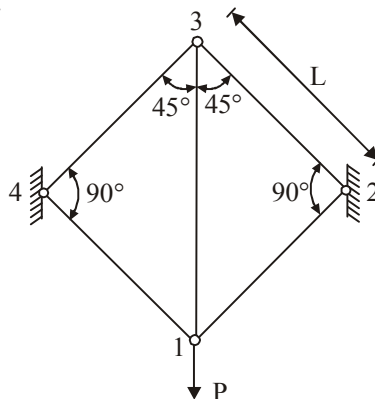
2. A column of length L is subjected to a compressive load P . Both ends of the column are fixed. Determine the buckling load of the column.
3. Write the boundary conditions for the plate of length 'a' and breadth 'b' for the following cases (i) Simply supported ends (ii) Clamped or fixed edges (iii) Free edges.
4. With the help of neat diagram, explain all the features of elastic buckling of curved rectangular plates.
5. Explain a semi tension field beam and obtain the expressions for loads in the stiffeners and both the flanges of the beam.
6. A member of a pin-jointed frame work is shown below. Derive the expression for stiffness matrix $[K_{ij}]$.



for the member. Forces $\bar{F}_{x,i}$ and $\bar{F}_{y,j}$ are acting along the axis of the member.

SECTION-C

7. A pin-ended column of length L is subjected to a compressive load P_{cr} . Obtain the expression for buckling load by energy method.
8. Figure below shows a square symmetrical pin-jointed truss. Develop the stiffness matrix for the truss.



9. Draw a pure tension field beam. Derive the expressions for loads in stiffener, upper and lower flanges of the beam, maximum bending moment, direct compressive stresses in flanges and stiffeners