

- Q.5 (a)** Briefly explain the steps involved in finite element analysis. **07**
Discuss the assembly process in detail
- (b)** Derive the shape function & its variation for two noded Beam **07**
element by using Generalized co-ordinate.

OR

- Q.5 (a)** A bar shown in Fig. 3 has an axial load, $P = 100 \times 10^3 \text{ N}$. **07**
(i). Determine the nodal displacement.
(ii). Determine the stress in each element.
(iii). Determine the reaction Forces.
- (b)** Derive the Shape functions for four Noded Quadrilateral **07**
elements.

