

- Instruction: 1. Figures to the right indicate full marks.  
2. Assume suitable data, scale if necessary.  
3. Neat proportionate sketches are necessary to explain theories.

- Q-1 Answer the following.( Attempt any Five) (25)
- (a) Explain concept of frame structure with neat sketch.
  - (b) Explain rigid frame structure with neat sketch.
  - (c) State the parallelogram law of forces.
  - (d) Give basic structure system of bearing wall system.
  - (e) State and explain Lami's theorem.
  - (f) Define forces and also explain characteristics of forces.
  - (g) Explain with sketch the following system of forces
    - (a) coplanar forces, (b) concurrent forces, (c) non-coplanar forces.
- Q-2 Answer the following.( Attempt any Two) (10)
- (a) Explain types of beam with neat sketch.
  - (b) Explain terms shear forces and bending moment with suitable examples
  - (c) Explain types of supports with neat sketch.
- Q-3 Answer the following.( Attempt any Three) (15)
- (a) Give basic structure system of post-end-beam structures.
  - (b) Explain briefly tension with diagrams.
  - (c) What is truss and write use of truss.
  - (e) State and explain triangle law of forces.
  - (f) Explain concept of load bearing structure with neat sketch.