

### UNIT-III

| S. No.                                | Questions                                               | BTL | CO  | PO |
|---------------------------------------|---------------------------------------------------------|-----|-----|----|
| <b>Part–A(Short Answer Questions)</b> |                                                         |     |     |    |
| 1                                     | State the assumptions of simple bending theory.         | L1  | CO1 | 1  |
| 2                                     | Define neutral axis.                                    | L1  | CO1 | 1  |
| 3                                     | Define neutral layer.                                   | L2  | CO1 | 2  |
| 4                                     | What is section modulus?                                | L1  | CO1 | 1  |
| 5                                     | Define flexural stress.                                 | L2  | CO1 | 2  |
| 6                                     | State the bending equation.                             | L1  | CO1 | 1  |
| 7                                     | Define moment of inertia.                               | L1  | CO1 | 1  |
| 8                                     | What is the significance of section modulus?            | L2  | CO1 | 2  |
| 9                                     | Where is bending stress maximum in a beam?              | L2  | CO1 | 2  |
| 10                                    | Where is shear stress maximum in a rectangular beam?    | L2  | CO1 | 2  |
| 11                                    | What is the significance of the section modulus?        | L1  | CO1 | 1  |
| 12                                    | Write the bending equation.                             | L2  | CO1 | 2  |
| 13                                    | Define section modulus.                                 | L1  | CO1 | 1  |
| 14                                    | Define shear stress in beams.                           | L2  | CO1 | 2  |
| 15                                    | Write the shear stress formula                          | L2  | CO1 | 2  |
| <b>Part– B(Long Answer Questions)</b> |                                                         |     |     |    |
| 1                                     | Derive the bending equation.                            | L4  | CO3 | 3  |
| 2                                     | Explain assumptions made in simple bending theory.      | L4  | CO3 | 3  |
| 3                                     | Determine bending stresses in rectangular sections.     | L4  | CO3 | 3  |
| 4                                     | Determine bending stresses in solid circular sections.  | L3  | CO3 | 2  |
| 5                                     | Determine bending stresses in hollow circular sections. | L4  | CO3 | 3  |
| 6                                     | Determine section modulus of I-section.                 | L4  | CO3 | 3  |
| 7                                     | Determine section modulus of T-section.                 | L4  | CO3 | 3  |
| 8                                     | Design a simple beam section using bending theory.      | L3  | CO3 | 2  |
| 9                                     | Numerical problems based on flexural stresses.          | L4  | CO3 | 3  |

**Blooms Taxonomy Level (BT)** (L1–Remembering; L2–Understanding; L3–Applying; L4– Analyzing; L5–Evaluating; L6–Creating)