

- a) facilitate construction
 c) avoid buckling of longitudinal bars
- b) facilitate compaction of concrete
 d) increase the load carrying capacity of the column
- (ix) The longitudinal shearing stresses acting on the surface between the steel and concrete are called
- a) bond stresses
 c) compressive stresses
- b) tensile stresses
 d) none of these
- (x) The spacing of vertical stirrups in a rectangular beam is
- a) maximum near the supports
 c) maximum near the centre
- b) minimum near the supports
 d) minimum near the centre
- (xi) The bond between steel and concrete is mainly due to
- a) pure adhesive resistance
 c) mechanical resistance
- b) frictional resistance
 d) all of these
- (xii) In a doubly reinforced beam, steel reinforcement is provided in a
- a) tensile zone
 c) either (a) and (b)
- b) compression zone
 d) both (a) and (b)
- (xiii) If the area of tensile steel reinforced is doubled, the moment of resistance of the beam increases only by about
- a) 0.12
 c) 0.32
- b) 0.22
 d) 0.42
- (xiv) Normally the tensile strength of concrete is about _____ of its compressive strength
- a) 10 to 15%
 c) 20 to 25%
- b) 15 to 20%
 d) 25 to 30%
- (xv) In an over reinforced section
- a) (a) steel reinforcement is not fully stressed to its permissible value
 c) either (a) or (b)
- b) (b) concrete is not fully stressed to its permissible value
 d) both (a) and (b)

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Explain the Modulus of elasticity of concrete. (3)
3. Explain what do you mean by Long Column & Short Column. (3)
4. Explain What is characteristic load? (3)
5. Classify the criteria recommended by IS 450-2000 for cover to reinforcement? (3)

OR

Write short note on splices in tensile reinforcement. (3)

6. How do you prevent minimum shear reinforcements? (3)

OR

Give the property of good a bond between concrete reinforcement. (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Write a short note on different kinds of loads to be taken into account for the design of RCC structures. (5)
8. Explain what is a balanced section, under reinforced section & Over reinforced section. (5)
9. Write short note on over reinforced sections. (5)
10. Explain what are the assumptions made in limit state of collapse in flexure? (5)

OR

Explain what is doubly reinforced sections? (5)

11. Define single reinforced & double reinforced beams with sketch. (5)

OR

Differentiate between one-way slab and two-way slab. (5)

12. How to select cross sectional dimensions for beams?

(5)

OR

Briefly explain about partial safety factor.

(5)
