

- Q.31 Write short note on effective length of column.
- Q.32 Find M.O.R For beam having width 300mm, effective depth 500 mm with 5No. 16mm ϕ bar. Take stress in steel 230 N/mm² and in concrete 7 N/mm².
- Q.33 Write short note on limit state method.
- Q.34 What assumptions are taken/made in limit state of collapse.
- Q.35 Why doubly reinforced beams are provided.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 An R.C.C. beam 250x500 mm (effective) is subjected to a factored moment of 250 KN-m. Find the area of steel required. Use M₂₀ grade of concrete and Fe415 steel.
- Q.37 Write design step for one way slab in LSM.
- Q.38 A short column 400mmx400mm is reinforced with 4-20 mm ϕ bars. Find ultimate load carrying capacity of the column if minimum eccentricity is less than 0.05 times the lateral dimension. Use M₂₀ grade of concrete and Fe415 steel.

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Sub.: Reinforced Cement Concrete (RCC)

Time : 3Hrs.

M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 Steel is strong in
a) Compression b) Tension
c) Shear d) Torsion
- Q.2 The value of modular ratio for M15 Concrete is taken as
a) 9.33 b) 18.67
c) 13.33 d) 28.67
- Q.3 Unit wt of P.C.C. is taken as
a) 20000 N/m³ b) 22000 N/m³
c) 24000 N/m³ d) 25000 N/m³
- Q.4 Min. No. of longitudinal bar for circular column is
a) 6 b) 4
c) 8 d) 12
- Q.5 Two way slab are provided if ratio of longer span to shorter span
a) Less than 2 b) Greater than 2
c) Equal 2 d) None of these

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- Q.6 Post tensioning method is suitable for production of
 a) Railway sleeper b) Electric pole
 c) Bridges d) All of above
- Q.7 Distribution steel in one way slab is provided to
 a) Distribute the load
 b) Take temperature stress
 c) Shrinkage stress
 d) All
- Q.8 In flexural member's the failure of concrete takes place due to
 a) Tensile stress
 b) Diagonal compression
 c) Diagonal tension
 d) All above

- Q.9 As per IS 456-2000, the no. of grades in concrete are
 a) 10 b) 12
 c) 13 d) 15
- Q.10 the max value of span/depth ratio for simply supported beam should not exceed
 a) 7 b) 15
 c) 20 d) 25

SECTION-B

- Note:** Objective type questions. All questions are compulsory. (10x1=10)
- Q.11 Define R.C.C.

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- Q.12 Define M.O.R.
- Q.13 Define doubly reinforced beam.
- Q.14 What is partial safety factor for material are taken.
- Q.15 Define singly reinforced beam.
- Q.16 Define Pre-stress.
- Q.17 Define Two way slab.
- Q.18 Define Inverted T. Beam.
- Q.19 Define neutral axis.
- Q.20 What do you mean by Maximum shear stress

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

- Q.21 Explain disadvantage of Pre-stressed concrete.
- Q.22 Explain Physical properties of mild steel.
- Q.23 Explain under reinforced section by working stress method.
- Q.24 Explain L-Beam with neat sketch.
- Q.25 Explain deep foundation.
- Q.26 Which are different forms of providing shear reinforcement in beam.
- Q.27 Write I.S. Specification for lateral reinforcement in column.
- Q.28 Differentiate between Mild steel and Tor steel.
- Q.29 Compare one way slab with two way slabs.
- Q.30 Explain various classification of column.

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