Roll No.

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37044

DESIGN OF CONCRETE STRUCTURE-II CE-401E

Time: Four Hours]

[Maximum Marks: 100

Note: Attempt Five questions in all, selecting at least one question from each Unit. All questions carry equal marks. Any missing data may be assumed suitable. Usc is IS: 456 and IS:: 1343: 1980 is allowed. Use M20 concrete and FE415 steel if not specified in question.

Unit I

- What do you understand by pre-stressing? Classify various pre-stressed member.
- 2. Design a three span continuous beam having a span of 5 m each. Take dead load and live load on beam as 13 kN/m and 10 kN/m.

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Unit II

- 3. Design a doglegged stair case for an office building in a room measuring 3 m 6 m (clear dimension) floor to height is 3.5 m. A building is public building liable to over crowding stairs are supported on brick wall 230 mm thick at the end of the landing. Use M20 and Fe 415.
- Design an interior panel 5.0 m × 5.0 m of flat slab for the super imposed load of 17 kN/m² including finishes.
 Use M20 concrete and Fe415 steel.

Unit III

- 5. Explain the various steps of design of SILO in detail.
- 6. Design a bunker to store 350 kN of coal. Take unit weight of coal as 8300 N/m². Angle of repose is 30°. The stored coal is to be surcharged at its angle of repose. Take permissible stress in steel as 140 N/min².

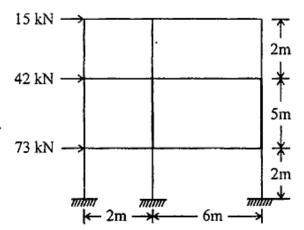
Unit IV

- 7. (a) What do you understand by yield line theory? List out the basic assumption. http://www.kuonline.in
 - (b) A square slab of size 4 m × 4 m is simply supported all around and carries a service live load of 3 kN/m². Design the slab using yield line theory.

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8. Compute moment, shear force and axial forces in the members of a two storeyed rigid building frame using cantilever method:



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