(10)

(S17)-2069



Q7.

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column for the given load.

	Total No. of Pages : 02 al No. of Questions : 09	
	B. Architecture (Sem3) STRUCTURE DESIGN-III Subject Code: AR-231 M.Code: 45025	
Tim	e: 3 Hrs. Max. Marks: 50	
1NS 1. 2. 3.	TRUCTIONS TO CANDIDATES: Attempt five questions taking any one question from each unit. All questions are of equal marks. Use of IS-456, Scientific Calculator is allowed. Assume missing data if any. Draw neat diagrams. Use M ₂₀ concrete Fe415 steel.	
	UNIT-I	
Q1.	Design a singly reinforced beam to carry a superimposed U.D.L. of 15kN/m over a clear span of 5m. Apply check for shear only.	3)
Q2.	Design a cantilever beam to carry a superimposed U.D.L. of 6KN/m over a span of 2m. Apply check for shear only. (10 UNIT-II	3)
Q3.	Design a one-way slab of 3m span to carry a live load of 2.5KN/m ² and dead load of finishings lKN/m ² . Apply check for deflection only.	3)
Q4.	Design a two-way slab for a $3.5m \times 5m$ room to carry a live load of $2KN/m^2$ and dead load of finishings $1KN/m^2$. Apply check for deflection only. (10)	3)
	UNIT-III	
Q5.	Design a dog-legged stair for a residential building. The floor height is 3.3m. Use various codal provisions for design.	3)
	UNIT-IV	
Q6.	Design a short circular R.C.C. column to carry an axial load of 1000KN. (10	O)

A column has an effective length of 5m. The axial load is 800KN. Design a safe square



UNIT-V

- Q8. Design a square foundation for a square column of 350mm X 350mm. The axial load on column is 900KN. The safe bearing capacity of soil is 120KN/m². Apply usual checks. (10)
- Q9. Design a rectangular foundation for a rectangular column of 350mm × 500mm. The axial load on column is 900KN. The safe bearing capacity of soil is 150KN/m². Apply usual checks.

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NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

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