Seat No.: _____   Enrollment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
D.ARCH – SEMESTER - III • EXAMINATION – WINTER 2017

Subject Code: 3336204   **Date: 09/11/ 2017**
Subject Name: Structure-II
Time: 10:30 AM TO 12:30 AM   **Total Marks: 50**
Instructions:
      1. Attempt all questions.
      2. Make suitable assumptions wherever necessary.
      3. Figures to the right indicate full marks.
      4. Use of programmable & Communication aids are strictly prohibited.
      5. Use of only simple calculator is permitted in Mathematics.
      6. English version is authentic.

Q.1	(a)	Explain the following terms: (Any five) 1. Curing. 2. Durability. 3. Beam. 4. Workability. 5. Water Cement Ratio. 6. Compaction.	10
Q.2	(a)	Define : Modular ratio, Moment of Resistance	03
	(b)	Define pre stressed concrete and give its advantages and disadvantages.	07
		OR	
	(b)	State the assumptions made for Working Stress Method.	07
Q.3	(a)	Write in brief about folded plates, domes and shells.	03
	(b)	Explain losses in pre stressed system.	07
		OR	
Q.3	(a)	Explain in brief: creep and shrinkage of concrete.	03
	(b)	Advantages and disadvantages of R.C.C. over other conventional material	07
Q.4	(a)	Explain: composition of concrete.	03
	(b)	Calculate the design constants for the following materials considering the balanced design for singly reinforced section. The materials are grade M20 concrete and mild steel reinforcement.	07
		OR	
Q.4	(a)	Describe about the different types of pre stressing materials.	03
	(b)	For a rectangular beam of size 250 mm wide X 520 mm effective depth, find out the balanced depth of neutral axis, balanced lever arm, balanced moment of resistance and balanced steel area. The materials are M 20 grade concrete and mild steel reinforcement of grade Fe 250.	07
Q.5	(a)	Write in brief about types of reinforcements.	03
	(b)	Explain: pre tensioning and post tensioning.	07
		OR	
Q.5	(a)	Explain with neat sketch: Flat slabs and space frames.	03
	(b)	Explain the behavior of pre-stressed concrete beams.	07

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