Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. IST Semester–Remedial Examination – July- 2011

Subject code: 711506N

Subject Name: Basics of Reinforced Concrete and Masonry Construction

Date:13/07/2011 **Time: 10:30 am – 01:00 pm**
Total Marks: 70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q 1	**A**	In general, discuss how strength and porosity are related to each other	**07**
	B	At a given water/cement ratio, a change in the cement content or aggregate grading can be made to increase the consistency of concrete. Why is it not desirable to produce concrete mixtures of a higher consistency than necessary?	**07**
Q 2	**A**	What do you understand by the term curing of concrete? What is the significance of curing and enlist various techniques of curing of concrete.	**07**
	B	What precautions are to be taken during mixing and transportation process of concrete? Discuss the adverse effects that occur due to improper mixing or placing.	**07**
		OR	
	B	Briefly explain the causes and control of scaling and D-cracking in concrete. What is the origin of laitance and what is its significance.	**07**
Q3	**A**	Write short note on admixtures used to increase workability of concrete.	**07**
	B	What do you understand by the terms polymer concrete, latex-modified concrete and polymer impregnated concrete? What is the principal consideration in the design of polymer concrete mixtures?	**07**
		OR	
Q 3	**A**	State the types of steel to be used as construction material. Mention the standards and test required for the same.	**07**
	B	Define mass concrete. What type of cement and admixtures are used for making mass concrete mixtures? From the standpoint of tensile strain capacity, which factors are important in mix proportioning?	**07**
Q 4	**A**	Write short note on ready mix concrete.	**07**
	B	In spite of the cellular structure of aggregate, lightweight concretes show less micro cracking and excellent durability. Why?	**07**
		OR	
Q 4	**A**	Enlist the factors that cause distress in structure. Discuss the precautionary and remedial measures.	**07**
	B	Enlist the various repairing materials and repairing techniques that are used for distressed structures.	**07**
Q 5	**A**	State the steps for brick masonry design with a suitable example.	**07**
	B	Non-destructive testing in concrete has a vital part in assessing the quality of concrete . Name the tests that justify the statement.	**07**
		OR	
Q 5	**A**	Write short note on earthquake resistant features of masonry.	**07**
	B	Write down the steps of IS method of mix design as per IS-10262(2009).	**07**

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