Seat No.:	Enrolment No.

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

BE - SEMESTER-IV (NEW) - EXAMINATION - SUMMER 2017

Subject Code: 2140608 Date: 03/06/2017

**Subject Name: Concrete Technology** 

Time: 10:30 AM to 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		Short Questions	
		Define fineness modulus.	2
	2	Define Carbonation of concrete.	2
	3	The initial setting time of ordinary portland cement should not be less thanand final setting time should not be more than	2
	4	The standard size of concrete cube is and cement cube is to measure compressive strength of concrete.	2
	5	Name two non distructive tests for concrete.	2
	6	Minimum water cement ratio required for workable concrete is	1
	7	The nominal mix corresponding to M20 grade concrete is	1
	8	Efflorescence in cement is caused due to an excess of	1
	9	Soundness of ordinary portland cement is done by test.	1
Q.2	(a)	Enlist minimum six different types of cement.	03
	(b)	Explain the qualities of water required for production of concrete.	04
	(c)	Describe briefly the chemical composition, major compounds formed and hydration of cement.	07
		OR	
	(c)	Discuss various aspect of durability of concrete. What measures are taken by IS code to ensure durable structure?	07
Q.3	(a)	Explain the factors affecting strength of concrete.	03
		Explain briefly the procedure for the damage assessment of structural element.	04
	(0)	Explain ultrasonic pulse velocity test for hardened concrete.	07
	(0)		0/
0.3	(a)	OR What is workability? Explain different types of slump with sketch only.	02
(b	. ,	What are the factors that affect permeability of concrete?	03
	(c)	Write short note on silica fume.	04
0.4	, ,		07
Q.4	(a)	Define: (i) Mean (ii) Variance (iii) Range	03
	(b)	Explain cracks repair by injection grouting.	04
	(c)	Write short note on ready mix concrete.	07
		OR	
Q.4		Make flow chart of classification of aggregate.	03
	(b)	Tomorete and fresh conference.	04
	(c)	List various methods of concreting under water and explain 'tremie' method.	07

<ul><li>(b) Explain the segregation and bleeding effect on concrete.</li><li>(c) Explain quality control of concrete and factors affecting it.</li></ul>	04
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	07
- SEMESTER-4 (NEW S'NO ABUS) EXAMINATION-SUMMER 2017	
Q.5 (a) Explain the terms: Water to cement ratio	03
(b) Briefly explain alkali-aggregate reaction.	04
(c) Write the steps of mix design using IS10262.	07