

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV(NEW) – EXAMINATION – SUMMER 2019

Subject Code:2140608

Date:15/05/2019

Subject Name: Concrete Technology

Time:02:30 PM TO 05:00 PM

Total Marks: 70

Instructions:

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

		MARKS
Q.1	(a) Explain the effect of water cement ratio on the workability and strength of Concrete?	03
	(b) Define the primary and secondary hydration process of Cement Paste.	04
	(c) Write down merits and demerits of concrete properties in terms of workability, strength and durability while using the Ordinary Portland Cement and Portland Pozzolana Cement.	07
Q.2	(a) Differentiate between setting and hardening of cement.	03
	(b) Describe the wet process of manufacturing of cement in the flow chart.	04
	(c) Describe the test for determining initial and final setting time of cement.	07
	OR	
	(c) What is sustainability of concrete? How to make concrete sustainable according to your viewpoint?	07
Q.3	(a) List out the factors affecting the workability of concrete and explain anyone in detail.	03
	(b) Differentiate between volume batching and weigh batching in concrete mix procedure.	04
	(c) State the different methods of concrete curing and explain anyone in detail.	07
	OR	
Q.3	(a) List out the factors affecting the segregation & explain anyone.	03
	(b) List out various types of special concreting techniques & write the merits of ready-mixed concrete.	04
	(c) List out a minimum of seven types of special concrete & describe lightweight aggregate concrete.	07
Q.4	(a) Write down the purpose of adding Chemical Admixtures in concrete.	03
	(b) List out the factors affecting shrinkage and explain any one in detail.	04
	(c) Write down the factors affecting the strength of concrete & describe any three in detail.	07
	OR	
Q.4	(a) Why compressive strength of concrete performed on 7 days and 28 days? Give your comments on that.	03
	(b) List various crack repair techniques and explain any one in detail.	04
	(c) Describe the Rebound Hammer Test with the labelled sketch. Write down the limitations of this test method.	07
Q.5	(a) Explain in brief about freezing and thawing effect of concrete.	03
	(b) Write down the various advantages of Quality control of the concrete mix.	04

- (c) In which cases the nominal mix and design mix is used? Describe step by step procedure of concrete mix design as per IS code. **07**

OR

- Q.5** (a) Briefly explain the Alkali-aggregate reaction. **03**
(b) Explain Sulphate Attack on concrete. **04**
(c) List out the factors affecting the permeability of concrete. Explain any two out of them. **07**
