

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

- (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**

\*\*\*\*\*

www.FirstRanker.com