

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-IV(New) EXAMINATION – SUMMER 2016

Subject Code:2140608

Date:01/06/2016

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.

		MARKS
Q.1	Short Questions	14
	1 Which test is used to measure the durability of cement?	
	2 What is the effect of coarseness of aggregate on the water demand?	
	3 Define Creep of Concrete.	
	4 What is difference between air entrained and air entrapped?	
	5 What is leaching?	
	6 Give the value of initial and final setting time of cement.	
	7 What is the use of Super plasticizer in Concrete?	
	8 Define Standard Consistency of cement.	
	9 Which type of aggregates are preferred gap graded or uniformly graded? Why?	
	10 In a slump test of fresh concrete, if shear slump is observed, what does it indicates?	
	11 What should be the value of flakiness and elongation index of aggregate to be used in Structural Concrete?	
	12 Fine aggregate used in the production of concrete should be of which Zone? Why?	
	13 Define Carbonation of concrete.	
	14 Which strength of concrete is measured by testing Beam?	
Q.2	(a) How fly ash concrete gain strength in later age? Explain Mechanism.	03
	(b) Give the Bogue's Compound for Cement. And explain their role in hydration process.	04
	(c) Explain wet process for manufacturing of cement.	07
	OR	
	(c) Compared to other materials, what are the advantages of using concrete for structures?	07
Q.3	(a) Explain the effect of water cement ratio on the strength of Concrete? Explain Mechanism.	03
	(b) Explain Segregations of concrete in detail.	04
	(c) What is durability of concrete? Enlist factors affecting durability of concrete. Explain any one in detail.	07
	OR	
Q.3	(a) What is shrinkage? Give the classification of shrinkage.	03
	(b) Explain Bleeding in detail.	04
	(c) What is permeability of concrete? Enlist factors affecting permeability of concrete. Explain any one in detail.	07
Q.4	(a) Describe the importance of the quality of water used for concrete.	03
	(b) Give the Limitation of Rebound hammer test.	04
	(c) Write short note Alkali aggregate reaction.	07
	OR	
Q.4	(a) Explain bulking of aggregate.	03

	(b)	Give the factors affecting the measurement of Ultrasonic pulse velocity test.	04
	(c)	Enlist different tests for hardened concrete. Explain Split cylinder test.	07
Q.5	(a)	Enlist factors affecting properties of fibre reinforced concrete.	03
	(b)	Explain the effect of cold weather on concrete.	04
	(c)	Explain Indian Standard Mix design method as per IS:10262:2009 with its salient features.	07
OR			
Q.5	(a)	Explain mechanism of sulphate attack on concrete.	03
	(b)	Which are the basic requirements or property of the Self compacting concrete? Enlist various tests for measurement of each property.	04
	(c)	Explain principle of mix design. Explain parameters and factors influencing mix design.	07
