

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER- IV EXAMINATION – SUMMER 2020****Subject Code: 2140608****Date: 04/11/2020****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** (a) State chemical composition of Ordinary Portland cement. **03**
 (b) Differentiate between setting and hardening of cement. **04**
 (c) State major Bogue's compounds, its abbreviations and discuss its properties. **07**

- Q.2** (a) Describe Aggregate Crushing value test on coarse aggregate. **03**
 (b) Discuss the quality of water for making concrete and state limiting values of impurities as recommended by IS 456:2000. **04**
 (c) Describe the test for determination of initial and final setting time of cement. State IS requirements for setting time for OPC. **07**

OR

- (c) Discuss importance of grading of aggregate. Explain gap graded, well graded, uniformly graded and poorly graded aggregate with the help of grading curves. **07**
- Q.3** (a) List different methods for curing of concrete and explain anyone in detail. **03**
 (b) Explain segregation and bleeding. How it can be controlled? **04**
 (c) List the factors affecting workability of concrete and explain any three of them. **07**

OR

- Q.3** (a) Explain the terms Shrinkage, Creep and Modulus of Elasticity of concrete. **03**
 (b) Discuss the effect of water cement ratio on the strength of Concrete. **04**
 (c) Enlist different tests for hardened concrete. Explain Split cylinder test. **07**
- Q.4** (a) Explain alkali aggregate reaction. State factors promoting it. **03**
 (b) What do you understand by durability of concrete? Enlist factors affecting durability of concrete. Explain any one in brief. **04**
 (c) Describe slump test for measurement of workability. How the test results are interpreted? **07**

OR

- Q.4** (a) State acceptance criteria of concrete as per IS456:2000 **03**
 (b) Describe in detail fiber reinforced concrete. **04**
 (c) Define nominal mix and design mix concrete. Describe step by step procedure of IS method of mix design. **07**
- Q.5** (a) Discuss polymer concrete. **03**
 (b) Write short note on cold weather concreting. **04**
 (c) Define admixture and state uses of any three admixtures in concrete. **07**

OR

- Q.5** (a) Discuss different methods of transporting fresh concrete. **03**
 (b) Explain effect of plasticizers on properties of concrete. **04**
 (c) List various Non-Destructive tests for assessing the strength of concrete. Explain Rebound Hammer test. **07**
