

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER- V EXAMINATION-SUMMER 2023

Subject Code: 3150610

Date: 26/06/2023

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.
4. Simple and non-programmable scientific calculators are allowed.

- Q.1** (a) What is the effect of water cement ratio on strength of concrete? **03**
(b) What is gap grading? Explain briefly. **04**
(c) Explain Indian Standard Mix design method as per IS:10262 with its salient features **07**

- Q.2** (a) Enlist different types of Cement. **03**
(b) Write down Bouge's compounds of cement. Explain their role in the hydration process. **04**
(c) State the advantages of concrete as a construction material. **07**

OR

- (c) Explain wet process for manufacturing of cement.

- Q.3** (a) Briefly explain Gel-space ratio. **03**
(b) What is workability of fresh concrete. Enlist factors affecting workability. **04**
(c) Write importance of curing of concrete. Explain different methods of curing procedure. **07**

OR

- Q.3** (a) Explain different types of slump with figure. **03**
(b) Define: **04**
1. Standard Consistency 2. Initial Setting Time
3. Final Setting Time 4. Soundness of Cement.
(c) What is permeability of concrete? Enlist factors affecting the permeability of concrete. Explain any three of them in detail. **07**

- Q.4** (a) What is compaction of concrete? What is the significance of compaction in concrete? **03**
(b) Enlist the different admixtures used in concrete construction. Explain the function of accelerator and retarders types of admixtures. **04**
(c) State factors affecting compressive strength of concrete and explain any one in detail. **07**

OR

- Q.4** (a) Define Ferro cement briefly. **03**
(b) Explain Bleeding in detail. **04**
(c) Explain the test for the determination of aggregate crushing value. **07**

- Q.5** (a) Distinguish between the grade of cement and grade of concrete. **03**
(b) State the different types of special concrete techniques. Explain the ready mixed concrete with its classification. **04**
(c) Enlist the types of NDT tests for concrete. Explain the rebound hammer test in detail. **07**

OR

- Q.5** (a) State the essential characteristics of water that can be used for mixing and curing of concrete. **03**
- (b) How fly ash concrete gain strength in later age? **04**
- (c) Explain the basic principle on which schmidt rebound hammer works. What are its limitations? **07**
