

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV (NEW) EXAMINATION – WINTER 2023

Subject Code: 2140608

Date: 19-01-2024

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

- Q.1 (a) Differentiate between grade of concrete and grade of cement. 03
(b) Discuss Water Cement Ratio. 04
(c) State major Bogue's compounds, its abbreviations and discuss its properties. 07

- Q.2 (a) Give classification of Cement. 03
(b) What is heat of hydration of cement? 04
(c) Describe the test for determining initial and final setting time of cement. 07

OR

- (c) Enlist the factors affecting workability of concrete and explain any two in detail. 07

- Q.3 (a) Differentiate between Entrapped air and Entrained air. 03
(b) Write a short note on cold weather concreting. 04
(c) Explain Aggregate Crushing value test for coarse aggregate. Also explain ten percent fines value. 07

OR

- Q.3 (a) What is gel-space ratio? 03
(b) Define and explain in brief: Creep and Shrinkage. 04
(c) Enlist and explain the factors affecting Strength of Concrete. 07

- Q.4 (a) What is Alkali Aggregate Reaction? 03
(b) Explain Segregation and Bleeding of Concrete? 04
(c) What is Durability of Concrete? Which are the Factors Affecting Durability? 07

OR

- Q.4 (a) What is Self-Compacting Concrete? 03
(b) What is Curing of Concrete? Enlist different curing methods. 04
(c) Enlist the methods of concrete mix design? Explain Indian Standard method in Detail. 07

- Q.5 (a) Describe the procedure of Grouting. 03
(b) What are the Limitations of Rebound Hammer Test? 04
(c) List down Non-Destructive test on Concrete. Explain Ultrasonic Pulse Velocity Test in detail. 07

OR

- Q.5 (a) What is the application of Fiber Reinforced Concrete? 03
(b) What is sulphate attack. 04
(c) Enlist and explain the methods of transportation of concrete. 07
