

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-III (OLD) EXAMINATION – WINTER 2018****Subject Code:130605****Date:10/12/2018****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) List out the raw materials required for making cement. **07**  
Explain any one process of manufacturing of cement in detail.
- (b) Write a short note on quality of mixing water to be used for various processes of concreting. **07**

- Q.2** (a) Give the detailed classification of the aggregates. **07**
- (b) Define Standard Consistency of Cement. Explain the test procedure to find the same and also state its importance. **07**

**OR**

- (b) Describe any two test methods to determine the physical strength of aggregates in detail **07**

- Q.3** (a) Enlist various types of admixtures and their relevant application. **07**
- (b) Define Workability of concrete. Explain the various factors that influence workability **07**

**OR**

- Q.3** (a) Explain in detail the need for curing of concrete structures. Explain in brief the various methods of curing. Write down the various steps of Concrete mix design as per **07**
- (b) IS method **07**

- Q.4** (a) In detail explain various factors that affect the hardened strength of concrete. **07**
- (b) Specify the difference between destructive and non-destructive testing. State the principle and limitations of Rebound Hammer test, Ultra sonic pulse velocity test. **07**

**OR**

- Q.4** (a) Explain various Laboratory and Physical tests conducted on cement. Explain the test procedure to determine the compressive strength of cement **07**

- Q.4** (b) Describe the sizes of the different moulds used for performing various tests on hardened concrete. Compare concrete cube strength & cylinder strength. **07**

- Q.5** (a) Explain the importance of compaction of the freshly placed concrete. Enlist different types of vibrators used for compaction. **07**
- (b) Describe in detail about Mass concrete and Underwater concreting technique. **07**

**OR**

**Q.5 (a)** Write short notes on the following ( any four)

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- I. Fly-ash as an admixture
- II. Alkali – aggregate reaction
- III. Causes of cracks in concrete structures
- IV. Fibre reinforced concrete
- V. Factors affecting the durability of concrete
- VI. Grading of aggregates
- VII. Segregation and Bleeding
- VIII. Moisture conditions of aggregates

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