

Code: CE4T1

**II B.Tech - II Semester – Regular / Supplementary Examinations
October 2020**

**CONCRETE TECHNOLOGY
(CIVIL ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

PART – A

Answer *all* the questions. All questions carry equal marks

11 x 2 = 22 M

1.

- a) What is an admixture and list different types of admixtures?
- b) Define the term setting of cement.
- c) List any four reasons for the chloride attack in concrete.
- d) State the term hydration of cement.
- e) Define shrinkage of concrete.
- f) What is meant by durability concrete?
- g) Differentiate between normal concrete and light weight concrete.
- h) List the non-destructive testing methods.
- i) Define self-compacting concrete.
- j) What is the ratio between cement and fine aggregate as per IS: 456?
- k) What is meant by maturity of concrete?

PART – B

Answer any **THREE** questions. All questions carry equal marks.

3 x 16 = 48 M

2. a) Describe the procedure for finding the Initial setting & final setting times of cement with neat sketches. 8 M
b) List out various characteristics of good aggregates and explain about any 3 in detail. 8 M
3. a) Explain the laboratory procedure for determination of workability of concrete by using Vee-Bee consistometer test with neat diagram. 11 M
b) Explain the effect of Gel-Space ratio on strength of hardened concrete. 5 M
4. a) Discuss in detail about the tests on compression strength, and flexure strength of concrete. 8 M
b) What is creep of concrete and factors affecting creep of concrete? 8 M
5. Design a concrete mix for characteristic strength of 35MPa at 28 days with a standard deviation of 4MPa. The specific gravity of FA and CA are 2.65 and 2.75 respectively. A slump of 50mm is necessary. The specific gravity of

cement is 3.15. Assuming the necessary data, design the mix as per IS code method. 16 M

6. a) Discuss about high strength concrete and high performance concrete. 8 M

b) Describe the ultrasonic pulse velocity test with the help of neat sketch. 8 M