Roll No						

Total No. of Pages : 02

Total No. of Questions : 09

# B.Tech. (Computer Science & Engineering) (Sem.–6) CONCRETE TECHNOLOGY Subject Code : BTCE-401-18 M.Code. : 79416 Date of Examination : 02-01-2023

Time: 3 Hrs.

Max. Marks : 60

## **INSTRUCTIONS TO CANDIDATES :**

- 1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- 2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
- 3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

## SECTION-A

- 1. Write briefly :
  - a) Write a brief note on concrete and its ingredients.
  - b) What are the different types of ad-mixtures?
  - c) What are the types of cracks in concrete?
  - d) Explain durability characteristics of concrete in brief.
  - e) What do you mean by Mix design?
  - f) Write a short note on split tensile test of concrete.
  - g) Define self compacting concrete.
  - h) Define workability.
  - i) Name the various methods of non-destructive testing of concrete.
  - j) Write a brief note on compaction of concrete.

#### **SECTION-B**

- 2. Define Shrinkage. How it can be classified? Explain in detail.
- 3. Define Creep. What are the different factors affecting creep?
- 4. Explain Freezing and thawing action of concrete. Also, write a note on the fire resistance of concrete.
- 5. What are the different types of defects in concrete and also explain their causes?
- 6. Write a detailed note on the compressive strength of concrete.

## **SECTION-C**

- 7. Write down various types of chemical attacks and their effects on concrete.
- 8. Write a detailed note on the following :
  - a) Polymer concrete
  - b) Prestressed concrete
  - c) Pervious concrete.
- 9. Design the following concrete mix for  $f_{Ck}$  of 30N/mm<sup>2</sup>.

Type of exposure = moderate, Design mix target slump = 150mm, Max size of coarse aggregate = 20mm, Fine aggregate = Zone II, Specific gravity of cement = 2.77, Specific gravity of water = 1, Specific gravity of admixture = 1.28, Specific gravity of coarse aggregate = 2.80, Specific gravity of fine aggregate = 2.65, Water absorption of coarse aggregate = 0.82%, Water absorption of fine aggregate = 1.21%

# NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.