

July-22-00351

B. Tech. EXAMINATION, 2022

Semester VI (CBCS)

CONCRETE TECHNOLOGY

CE-606

Time : 3 Hours

Maximum Marks : 60

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt *Five* questions in all, selecting *one* question from each Section A, B, C and D. Q. No. 9 is compulsory.

Section A

1. What is Workability ? Explain any *two* methods to measure workability of concrete. **10**

2. Calculate the quantities of ingredients required to produce one cubic metre of structural concrete. The mix is to be used in proportions of 1 part of cement to 1.26 parts of sand to 2.82 parts of 20 mm nominal size crushed coarse aggregate by dry volumes with a water cement ratio of 0.48 (by mass). Assume the bulk densities of cement, sand and coarse aggregates to be 1500, 1700 and 1600 kg/m³ respectively. The amount of entrained air is 2%. **10**

Section B

3. What are admixtures ? Enlist the different admixtures used in concrete construction. Explain the function and property of any *two* types of admixture. **10**
4. What are the factors which control the performance of High Performance Concrete ? **10**

Section C

5. Describe the procedure for preparation of polymer impregnated concrete. **10**
6. What is fibre reinforced concrete ? Enlist factors affecting properties of fibre reinforced concrete. What are the applications of fibre reinforced concrete ? **10**

Section D

7. Describe ultrasonic pulse velocity test. State the factors affecting the measurement of ultrasonic pulse velocity test. **10**
8. Describe the rebound hammer test. State the factors influencing the test results and the applications where this method is useful. **10**

(Compulsory Question)

9. Short answer type questions : **8×2½=20**
- (a) What are the factors influence the choice of max proportion ?
- (b) What is ready mixed concrete ?
- (c) What are the factors which influence corrosion ?
- (d) Where do you recommend high density concrete and why ?
- (e) Write down the application of polymer concrete.
- (f) Write a note on durability of concrete.
- (g) Describe the importance of curing.
- (h) Write down the constituents of high grade concrete.