[Total No. of Questions - 9] [Total No. of Printed Pages - 2]

Dec-25-0226

CE-606 (Concrete Technology)

B.Tech. 6th (CBCS)

Time : 3 Hours **Max. 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 each from Section A, B, C and D. Section E is compulsory.

SECTION - A

1. Describe the properties and advantages of high-density concrete. What are some common applications of this type of concrete? (10)

2. Define "durability of concrete" and discuss how environmental factors such as moisture and temperature affect concrete durability. (10)

SECTION - B

3. List and explain the different types of admixtures used to control the setting time of concrete. Provide examples of specific situations where each type is beneficial. (10)

4. What is Self-Compacting Concrete (SCC)? Explain how is it produced and outline its primary uses and benefits in construction? (10)

SECTION - C

5. Compare precast concrete and site-cast concrete. Highlight the key differences and describe the typical scenarios where precast concrete is advantageous. (10)

6. Differentiate between repair 8and rehabilitation of concrete structures. What are the modern materials and techniques used in concrete rehabilitation? (10)

SECTION - D

7. What is the Ultrasonic Pulse Velocity (UPV) test for concrete? Explain how is the test conducted and its importance in evaluating concrete quality. (10)

8. Describe the procedure for performing a compressive strength test on concrete cubes. What does this test reveal about the concrete's properties? (10)

SECTION - E (Compulsory)

9. (a) What factors can affect the setting time of concrete?

   (b) What is the significance of concrete slump test?

   (c) What is the difference between plain and reinforced concrete?

   (d) What role does the aggregate size play in the strength of concrete?

   (e) What is the purpose of using fibers in concrete?

   (f) What is the role of pozzolanic materials in concrete?

   (g) What are the benefits of using recycled aggregates in concrete?

   (h) How does carbonation affect concrete over time?

   (i) What materials and techniques are commonly used in the repair of damaged concrete?

   (j) How does the corrosion of reinforcement steel affect the durability of concrete? (10×2=20)