Roll No……..….. **Total No. of Printed Pages: [01]**
Total No. of Questions: [09]

B. Tech (Civil Engg) (Semester – 4th)
CONCRETE CONSTRUCTION TECHNOLOGY
Subject Code: BCIED1-453
Paper ID: [19110715]

Time: 03 Hours **Maximum Marks: 60**

Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A **(2 marks each)**

Q1. Attempt the following:
   a. Discuss the functions of admixtures with examples.
   b. Explain permeability and durability in concrete.
   c. Discuss the importance of curing in concrete construction.
   d. List the uses of fibre reinforced concrete.
   e. Explain shot-Crete and grouting.
   f. Differentiate between hot and cold weather concrete.
   g. Discuss the principle of prestressed concrete.
   h. List various methods of prestressed concrete construction.
   i. List various stages of inspection of concrete for quality control.
   j. Discuss the importance of inspection of concrete construction

Section – B **(5 marks each)**

Q2. List various types of admixtures, commonly used in concrete. Explain the advantages and disadvantages of using admixtures.
Q3. Define workability of concrete. List and discuss various factors that affect the workability of concrete.
Q4. Explain the properties of light weight concrete and discuss its uses with advantages.
Q5. Discuss the construction techniques for reinforced concrete elements.
Q6. Discuss in details the equipments used in prestressed concrete construction.

Section – C **(10 marks each)**

Q7. Discuss the design steps of mix design of concrete mix as per IS: 10262-2009.
Q8. a) Discuss the properties of high performance concrete. Discuss its advantages and uses.
   b) Explain the methods of curing concrete, in details. 2x5 = 10
Q9. Explain the following:-
   a) Discuss the procedure to inspect and check the quality control of concrete construction.
   b) Discuss the various factors causing variation in quality of concrete. 2x5 = 10