

Reg. No.

**MANIPAL INSTITUTE OF TECHNOLOGY****MANIPAL***(A constituent unit of MAHE, Manipal)*

**VII SEMESTER B.TECH (CIVIL) END SEMESTER EXAMINATIONS
DECEMBER 2020**

**SUBJECT: RECENT ADVANCES IN CONCRETE TECHNOLOGY
[CIE 4003]**

Date of Exam: /12/2020 Time of Exam: 9:00 AM to 12 NOON Max. Marks: 50

Instructions to Candidates:

❖ Answer ALL the questions & missing data may be suitably assumed

1A.	With a neat diagram, explain dry process of manufacturing of cement.	5
1B.	What is Alkali-Aggregate Reaction? Explain mechanism of deterioration of concrete through the Alkali-Aggregate Reaction.	5
2A.	a. How does water cement ratio affect the properties of hardened concrete and fresh concrete? b. What is role of air entraining admixtures in concrete?	5
2B.	Explain with a neat diagram any two tests conducted for the measurement of Workability of concrete.	5
3A.	Differentiate porosity and permeability of concrete. How does it affect the strength of hardened concrete?	3
3B.	Explain the properties of light-weight concrete and steps for Mix design for light weight concrete.	5
3C.	Why is air- entrainment needed in concrete?	2
4A.	Explain the techniques to cure cracks in concrete.	5
4B.	Explain pull out test and core cutter methods of non-destructive tests conducted for testing hardened concrete.	5
5A.	Discuss the advantages, disadvantages and applications of Fibre reinforced concrete.	5
5B.	Write short notes on: a) Mass concrete b) Ready mix concrete	5