R20 Regulation *Subject code: 3P4AF*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A' Grade)

B.Tech IV Semester Regular/Supplementary Examinations, September 2023

Concrete Technology

(Civil Engineering)

Maximum Marks: 70 Date:26.09.2023 Duration: 3 hours

Note: 1.This question paper contains two parts A and B.
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10x2M=20 Marks)

1 Define Consistency of cement.
2 List out the chemical composition of cement.
3 List the properties of aggregate.
4 What is bulking of sand?
5 Define Water Cement ratio.
6 How workability of the concrete can be improved?
7 Define Gel-Space ratio.
8 List out the factors influencing creep of concrete.
9 Define No-fines concrete.
10 Write the different methods of concrete mix design.

Part-B

Answer All the following questions. (5X10M=50Marks)

11 Describe the various types of mineral admixtures and their purpose. (10)

OR

12 A. Discuss about the different physical properties of Cement. (7)
B. Elaborate the setting time of cement (3)

13 A. Discuss Alkali Aggregate reaction. How will it affect the concrete properties. (5)
B. Differentiate between gap graded and well graded of aggregates. (5)

OR

14 Explain in detail about the various physical properties of coarse aggregate. (10)

15 Explain the tests conducted for the fresh concrete for workability. (10)

OR

16 A. Describe the Segregation and bleeding of concrete. (7)
B. How do you identify the quality of mixing water for concrete. (3)

17 Explain in brief on different types of tests conducted for Hardened Concrete. (10)

OR

18 A. Explain the Maturity concept for strength development of concrete. (5)
B. Explain the relation between compression and tensile strength of concrete. (5)

19 A. Describe the various aggregates used in light weight concrete. (6)
B. Discuss the different types of polymers used in concrete. (4)

OR

20 Define High Performance Concrete. Explain the factors which control the performance of HPC. (10)