Roll No. | | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 18

B.Tech. (Civil Engineering) (2018 Batch) (Sem.–4)

CONCRETE TECHNOLOGY

Subject Code : BTCE-401-18

M.Code : 77644

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

Write briefly :

1. Why Accelerators are added to concrete?
2. What is High Weight Concrete?
3. What do you mean by segregation?
4. Name the non-destructive methods to test concrete.
5. What is Polymer Concrete?
6. What do you understand by grading of aggregates?
7. List out the variables in proportioning of concrete mix.
8. What kinds of stump observed in slump cone test.
9. List out the effects of cold weather on concrete.
10. What is the significance of durability?

SECTION-B

11. What do you mean by alkali aggregate reaction?
12. Discuss the properties of high weight concrete and its applications.
13. Explain the factors influencing the strength of concrete?
14. What are Chemical Admixtures? Explain any two of them.
15. Compare the physical properties of 33, 43 and 53 grades of concrete.

SECTION-C

16. How do you determine the fresh concrete properties? Explain any two in detail?
17. What is the effect of water cement ratio on strength and durability of concrete?
18. Design a concrete mix for M30 grade of concrete using F type fly ash. Adopt BIS method with the following data :

    a) Type of cement - OPC 43 grades

    b) Maximum size of aggregate - 20 mm

    c) Exposure condition - Severe (RCC)

    d) Workability - 100 mm slump

    e) Maximum cement content - 320kg/m^3

    f) Maximum W/C - 0.46

    g) Method of placing concrete - Pumping

    h) Degree of supervision - Good

    i) Type of aggregate - Crushed angular aggregate

    j) Super plasticizer will be used

    k) Specific gravity of coarse aggregate - 2.80

    l) Specific gravity of fine aggregate - 2.70

    m) Specific gravity of fly ash - 2.2

    n) Water absorption : Coarse aggregates.- 0.5%, Fine aggregates.-Nil

    Grading of coarse aggregates is conforming to Table 2 of IS 383 and grading of Fine aggregate is falling in zone I.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.