

Register No.: Name:

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

FIFTH SEMESTER B.TECH DEGREE EXAMINATION (S), FEBRUARY 2023 CIVIL ENGINEERING

(2020 SCHEME)

Course Code : 20CET309

Course Name: Construction Technology and Management

Max. Marks : 100

Duration: 3 Hours

Instructions: Use of standard normal distribution table is permitted.

PART A

(Answer all questions. Each question carries 3 marks)

1. Discuss the significance of gradation of aggregates
2. Write main advantages of Super plasticizers
3. Differentiate between consistency of cement and workability of concrete
4. Explain 'damp proof course'
5. Discuss the cases where cantilever scaffolding is appropriate
6. Justify the need of prestressing in concrete
7. Briefly describe about Detailed Project Report
8. Explain selective tendering
9. Differentiate between total float and free float
10. What is meant by work break down structure.

PART B

(Answer one full question from each module, each question carries 14 marks)

MODULE I

11. a) Describe the manufacturing process of cement (8)
- b) Differentiate between Plywood and Multi wood (6)

OR

12. a) Discuss the effects of Fly ash and Ground Granulated Blast furnace Slag in fresh and hardened concrete (8)
- b) Sea water is not recommended for construction. Justify the statement (6)

MODULE II

13. a) Briefly describe about Methods of curing (6)
- b) Explain the tests to determine the strength parameters like compressive strength, tensile strength and flexural strength of concrete. (8)

OR

14. a) Discuss about the factors affecting the strength of concrete (8)
 b) Compare the pros and cons of RCC and Steel framed structures (6)

MODULE III

15. a) Explain about soil cement block masonry and its production process (8)
 b) Briefly describe about slip form shutters (6)

OR

16. a) Explain the 3D printing technology in Construction (6)
 b) Discuss the common type of failures in Steel structures (8)

MODULE IV

17. Define contracts. Also explain about types of contracts (14)

OR

18. a) Briefly describe about different phases of construction (6)
 b) What are the different types of tendering? (8)

MODULE V

19. The following table lists the activities, durations and their sequence of operation for a construction project. Prepare the network and compute in a table their Early start, Early finish, Late start and late finish times. Determine the critical path and find the total float and free float for all activities.

Activity	Duration (days)	Activity	Duration (Days)
1--2	8	4--7	0
1--3	10	5--6	4
1--4	5	5--7	3
2--7	6	5--8	6
3--4	3	6--8	5
4--5	7	7--8	5

(14)

OR

20. A small project consists of 7 activities. The time estimates in weeks of the different activities are given below.

Activity	1-2	1-3	1-4	2-5	3-5	4-6	5-6
Optimistic time(weeks)	1	1	2	1	2	2	3
Most likely time(weeks)	1	4	2	1	5	5	6
Pessimistic time(weeks)	7	7	8	1	14	8	15

(14)

- i) Draw the network
- ii) Determine the critical path
- iii) What is the probability of not completing the project within 18 days?
- iv) What is the probability of completing the project 3 weeks earlier than the expected time?
