

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S5 (S,FE) (FT/WP/PT) Examinations May/June 2026 (2019 Scheme)

Course Code: CET309

**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)

Mark
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|----|--|---|
| 1 | What is a fiber board? What are its uses? | 3 |
| 2 | Define initial and final setting time of cement. | 3 |
| 3 | List out the various factors which affect strength of concrete (Any 3). | 3 |
| 4 | List the various requirements of an ideal paint. | 3 |
| 5 | Describe slipform construction technology. | 3 |
| 6 | What is formwork, and what are its requirements? | 3 |
| 7 | Differentiate tender and contract. | 3 |
| 8 | What activities are involved in the pre-project phase, and how do they differ from those in the project phase? | 3 |
| 9 | Explain clearly the difference between an activity and an event. | 3 |
| 10 | Define Optimistic time estimate, Pessimistic time estimate and Most likely time estimate. | 3 |

PART B

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

Module -1

- 11 a) Discuss any three types of chemical admixtures. 7
- b) Explain with a flow chart, the manufacturing of cement by dry process. 7
- 12 a) Explain the following cement tests with the help of figures. 12
- (i) Compressive strength test
 - (ii) Specific gravity test
 - (iii) Soundness test
- b) Write a short note on the quality of water used in concrete construction. 2

Module -2

- 13 a) Distinguish between steel framed buildings and RCC framed buildings. 8
- b) Discuss the classification of arches based on shape. 6
- 14 a) Explain in detail, the various stages in the manufacturing of concrete. 7
- b) Explain the slump test. Mention the types of slumps in which slump test results are invalid and are too repeated. 7

Module -3

- 15 a) What is prefabricated construction? What are the advantages and disadvantages of prefabricated construction? 7
- b) Define scaffolding and also explain the different types of scaffolding (any 3) with sketches. 7
- 16 a) Explain the concept of Pre stressing concrete. Differentiate between Pre tensioning and Post tensioning. 7
- b) What are different types of failures of a building? List out the general reasons for a building collapse. 7

Module -4

- 17 Write advantages and disadvantages of the following. 14
- (i) Item rate contract
 - (ii) Lump sum contract
 - (iii) BOT type contract
 - (iv) Turnkey Contract
- 18 Explain the tendering process in detail. 14

Module -5

- 19 a) What is the work breakdown structure? What is its importance in network planning? 7
- b) PERT calculations yield a project length of 50 weeks, with a variance of 16. Within how many weeks would you expect the project to be completed with probability of (a) 95% (b) 75% (c) 40%? 7

- 20 a) The following table gives the activities in a construction project and other relevant information. 14

- (i) Draw the AON Network.
- (ii) Calculate Earliest and latest activity time
- (iii) Calculate Total Float for each activity
- (iv) Find the Critical path for the network.

Activity	Duration (Days)
1- 2	5
2 -3	6
2 -4	4
3 -5	5
3 -6	5
4 -7	6
5 -9	10
6-9	8
7 -8	2
8-9	3
9-10	2
