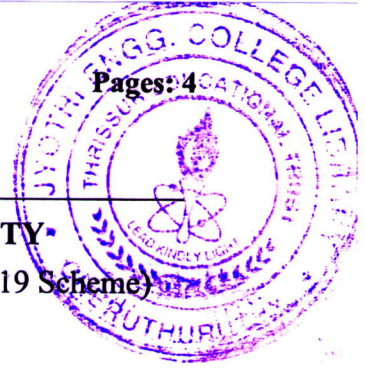


Reg No.: _____

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
