



Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

B.Tech Degree S5 (R, S) / S5 (PT) (R,S) / S5 (WP) (R) Examination November 2024 (2019 Scheme)

**Course Code: CET 309****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)*

Marks

- |    |   |   |
|----|---|---|
| 1  | Write any three comparisons between plywood and particle board.   | 3 |
| 2  | Explain gap graded, poorly graded and well graded aggregates.   | 3 |
| 3  | Explain the need for lintels. Name the types of lintels.  | 3 |
| 4  | List out the various factors which affect workability concrete (Any 3)  | 3 |
| 5  | Distinguish between plastering and pointing.  | 3 |
| 6  | Discuss the purpose of providing DPC.   | 3 |
| 7  | Define Item rate contract.  | 3 |
| 8  | What activities are involved in the post-project phase, and how do they differ from those in the project phase? | 3 |
| 9  | What is an equipment schedule? Illustrate with an example.  | 3 |
| 10 | What do you understand about the Critical path?   | 3 |

**PART B***(Answer one full question from each module, each question carries 14 marks)***Module -1**

- |    |  |    |
|----|--|----|
| 11 | a) Explain any four laboratory tests on cement.  | 12 |
|    | b) Define bulking of aggregates.   | 2  |
| 12 | a) What are admixtures? Describe the effects of following admixtures on cement concrete. | 7  |
|    | (i) Retarders  |    |
|    | (ii) Accelerators  |    |
|    | (iii) Plasticizers   |    |

- b) Explain with a flow chart, the manufacturing of cement by wet process. 7

**Module -2**

- 13 a) What do you understand from the Slump test? Describe it's complete test procedure. 10  
b) Explain the different defects in fresh concrete. 4
- 14 a) How are arches classified? Give a complete list of various types of arches with figures. (Any 4 with detail) 10  
b) List out the objectives of painting. 4

**Module -3**

- 15 a) Explain the concept of Prestressing. Discuss the two types of Prestressing. 10  
b) Explain filler slab technology and its benefits. 4
- 16 a) Explain the properties of hardened concrete. 10  
b) Differentiate load bearing and framed construction. 4

**Module -4**

- 17 Describe the various processes involved in tendering for a construction project. 14
- 18 List out the different types of contracts. Explain any three types of contracts in detail. Discuss the advantages and disadvantages of each. 14

**Module -5**

- 19 a) Define Optimistic time estimate, Pessimistic time estimate and Most likely time estimate. The time estimate received from two engineers for an activity of a project is as under. 6

	to	tm	tp
Engineer A	3	5	7
Engineer B	4	6	9

State Engineer A or Engineer B is more certain about the time of completion of the job.

- b) List the advantages and disadvantages of bar charts and milestone charts. 8

- 20 For the construction of a health centre building, the following activities are to be performed. 14

Activity	Initial and final node	Estimated duration (days)
P	(1,2)	2
Q	(2,3)	3
R	(2,4)	5
S	(3,5)	4
T	(3,6)	1
U	(4,6)	6
V	(4,7)	2
W	(5,8)	8
X	(6,8)	7
Y	(7,8)	4

- (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.
- (v) If activity (2, 3) were to take 6 days instead of 3 days, how much the project finish date is delayed?

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