



Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S5 (S,FE) (FT) (WP/PT) Examination May 2025 (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)*

		Marks
1	What are plasticisers, accelerators and retarders?	3
2	Explain bulking of fine aggregates.	3
3	Write a short note on batching of concrete.	3
4	Explain the factors affecting bleeding and segregation.	3
5	Explain rapid wall construction.	3
6	What are prefabricated buildings? What are its disadvantages.?	3
7	Discuss the different types of tenders.	3
8	What is security deposit? What percentage of the contract amount is collected in this regard? When is it returned back?	3
9	What are bar charts and milestone charts?	3
10	Explain Work Breakdown Structure.	3

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

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|----|--|---|
| 11 | a) Explain the manufacturing process of cement. | 8 |
| | b) Differentiate between Veneer, Plywood and Particle Board. | 6 |
| 12 | a) Explain the use of Fly Ash and GGBS as admixtures and its benefits. What are its sources? | 8 |
| | b) Explain any three laboratory tests on cement. | 6 |

Module -2

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|----|---|---|
| 13 | a) Explain the factors affecting workability. | 8 |
| | b) Explain two indirect tests to find the tensile strength of concrete. | 6 |
| 14 | a) Compare load bearing and framed structures. | 8 |
| | b) On a neat diagram, mark six components of a typical arch. | 6 |

Module -3

- 15 a) Explain pre stressing. What is pre tensioning and post tensioning? 8
 b) What are the qualities of a good formwork? 6
- 16 a) Explain the general reasons of failure of old RCC concrete structures. 8
 b) Explain voided slab technology and its benefits. 6

Module -4

- 17 Discuss the process of tendering for a construction project. 14
- 18 Explain any four types of construction contracts with their advantages and disadvantages. 14

Module -5

- 19 Draw the AON network of the following activities. Find the critical path. Calculate the Total Float, Free Float, Independent Float for each activity. 14

Activity	A	B	C	D	E	F	G	H	I
Predecessor		A	A	B	C	C	D, E	D	F, G
Duration (weeks)	2	2	5	3	4	3	5	4	2

- 20 Details of the activities of a project are as follows

14

Activity	A	B	C	D	E	F	G	H	I
Predecessor		A	A	B	B	C	E	F	G, H, D
Optimistic time (days)	4	5	4	15	10	8	4	1	6
Most likely time (days)	6	7	8	20	18	9	8	2	7
Pessimistic time (days)	8	15	12	25	26	16	12	3	8

- (i) Draw the AON network and find the project completion time with 50% probability.
- (ii) Find the probability of completion in (a) 43 days (b) 50 days.
- (iii) What is the project completion time with a probability of 90% being met?
