

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Fifth Semester B.Tech Degree Examination December 2021 (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	How is plywood manufactured? What are its properties?	3
2	State any three applications of accelerators in concrete.	3
3	Distinguish between segregation and bleeding in concrete.	3
4	List the various objectives of plastering.	3
5	Enumerate the advantages of slip form construction.	3
6	Write a note on the process of 3D printing in construction.	3
7	What are the various contents of a Detailed Project Report (DPR)?	3
8	Write a note on the BOT contract.	3
9	Distinguish between CPM and PERT.	3
10	What is a material schedule? Illustrate with an example.	3

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

11	a) Explain with a flow chart, the manufacturing of cement by dry process.	9
	b) How is the compressive strength of cement tested?	5
12	a) Explain the properties and uses of superplasticizers and retarders. How are these advantageous in concrete?	9
	b) Explain the importance of using graded aggregates in concrete making.	5

Module -2

13	Explain in detail, the various stages in the manufacturing of concrete.	14
14	a) Explain the indirect tests to determine the tensile strength of concrete.	9
	b) Discuss the classification of arches based on shape.	5

Module -3

15	a) Explain with a neat figure, the working principle of filler slab technology. What are its advantages?	9
	b) Write a note on soil cement block masonry.	5

- 16 a) Explain the concept of prestressing concrete. Differentiate between pre-tensioning and post-tensioning. 9
 b) What are the various types of formwork available? 5

Module -4

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

Module -5

- 19 a) A project consists of 8 activities with their duration (in weeks) as follows. 9

Activity	A	B	C	D	E	F	G	H
Duration	2	4	2	4	6	4	5	4

The precedence relationships of activities are as follows: A and B can be performed in parallel. C and D cannot start until A is complete. E cannot start until half the work of activity C is complete. F can start only after activity D is complete. G succeeds C. H is the last activity, which should succeed E.

Draw the bar chart and find the total time of completion of the project.

If there is an increase of 2 weeks in time of completion of activity A, what will be the corresponding increase in the total time of the completion of the project?

- b) List the advantages and disadvantages of bar charts. 5
 20 The following table lists the various jobs of a network along with their time estimates (days). 14

Activity	A	B	C	D	E	F	G
Predecessor	-	-	A	B	A	B	C, D
Optimistic time	6	5	4	4	4	2	4
Most likely time	9	8	7	7	7	5	10
Pessimistic time	18	17	22	16	10	8	22

Draw the project network (AoN network).

Calculate the length and variance of the critical path.

Calculate the probability of completing the project in 35 days.

Within how many weeks would you expect the project to be completed with a probability of 95%?
