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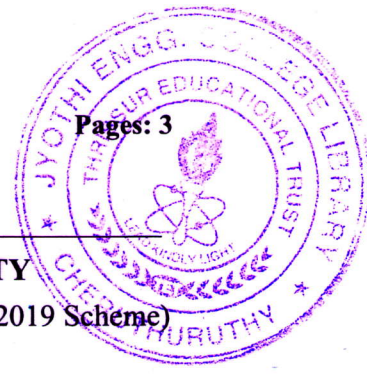
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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S5 (R, S) /S5 (PT) (R, S) Examination December 2023 (2019 Scheme)



Course Code: CET 309

Course Name: CONSTRUCTION TECHNOLOGY AND MANAGEMENT

Max. Marks: 100

Duration: 3 Hours

PART A

(Answer all questions; each question carries 3 marks)

		Marks
1	What is plywood? explain	3
2	Define initial and final setting time of cement	3
3	What are the objectives of plastering	3
4	Explain any 3 types of arches with neat sketch	3
5	Explain rapid wall construction technology with neat figures	3
6	Explain causes of failures of masonry structures.	3
7	Explain BOT type contract. What are its advantages and disadvantages.	3
8	Discuss the major duties of a project manager in a construction project.	3
9	What is work breakdown structure?	3
10	Discuss the importance of preparing the schedule of materials in a construction project.	3

PART B

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

Module -1

- 11 a) Explain the stages of manufacturing of cement with neat figures. 7
- b) Explain the tests for determining standard consistency and initial setting time of given cement sample with the help of figures. 7

OR

- 12 a) Distinguish between coarse aggregate and fine aggregate. Explain sieve analysis to determine the particle size distribution of fine aggregate and list out the importance of gradation of aggregates. 8
- b) List out any 4 types of admixtures and discuss the functions and applications of any 2. 6

Module -2

- 13 a) Explain any 3 laboratory tests on hardened concrete. 9
 b) List out the factors affecting workability 5

OR

- 14 a) What is lintel? Explain any 3 types of lintels with neat figures. 8
 b) What are the purposes of painting? Explain the uses of any 3 types of paints. 6

Module -3

- 15 a) What is scaffolding? Explain any 3 types of scaffolding with neat figures. 8
 b) Explain voided slab technology and filler slab technology with neat figures and what are its advantageous? 6

OR

- 16 a) Explain pre-stressed concrete. Distinguish between pre-tensioned and post-tensioned construction. 7
 b) What is prefabricated construction? What are the advantages and disadvantages of the same? 7

Module -4

- 17 a) What are the contents included in a detailed project report? Explain the importance of a detailed project report in the progress of construction project. 8
 b) Discuss different stages in tendering. 6

OR

- 18 a) Explain any 5 types of contracts. 10
 b) List out any 4 activities/jobs to be completed during the pre-project phase of a construction project. 4

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 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 short comings of the bar chart. 5

OR

- 20 a) What is critical path method? 4
- b) The following table lists the various activities of a network along with their time estimates (days). Draw the network diagram and determine the critical activities of the network. 10

Activity	Predecessor	Duration (days)
A	-	4
B	A	5
C	A	2
D	B	5
E	C	1
F	C	2
G	D, E	4
H	F, G	5
