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End Semester Examination, December 2024
B. Arch – VII Semester
PROJECT CONSTRUCTION MANAGEMENT (APAR425A)

Time: 3 hrs.

Max Marks: **50**

Note: *All Questions are compulsory. Marks are indicated against each question.*

PART-A

Q.1

- (a) (i) _____ is not a common constraint in project construction management.
(ii) _____ project delivery method involves a single entity that performs both design and construction for the client. [CO-1] [L-1] **2**
- (b) State one function of each of the following:
(i) Event
(ii) Activity [CO-1] [L-2] **2**
- (c) 1. The Earned Value Management (EVM) technique in project management is used to: [CO-1] [L-1] **2**
i) Monitor schedule deviations only
ii) Control project scope changes
iii) Track project performance in terms of cost and schedule
iv) Plan for human resources needs
2. Which of the following is the primary goal of project construction management?
i) Minimize time and maximize budget
ii) Ensure that a project is completed within time, budget, and quality standards
iii) Oversee the project design phase
iv) Negotiate contractor salaries
- (d) Which metrics indicates whether a project is ahead or behind schedule? [CO-1] [L-1] **2**
- (e) Differentiate between Cost Performance Index (CPI) and Schedule Performance Index (SPI) [CO-1] [L-2] **2**
2x5

PART-B

Q.2 Enumerate various functions of Project and explain work breakdown structure in brief. [CO-1] [L-3] **10**

OR

Classify and explain work scheduling processes in brief with the help of suitable examples.

[CO- 1] [L-3] **10**

Q.3 A project has the following time schedule.

[CO-2] [L-5] 10

Activity	Times in Weeks	Activity	Times in Weeks
(1-2)	4	(5-7)	8
(1-3)	1	(6-8)	1
(2-4)	1	(7-8)	2
(3-4)	1	(8-9)	1
(3-5)	6	(8-10)	8
(4-9)	5	(9-10)	7
(5-6)	4		

Construct the network and compute

1. T_E and T_L for each event
2. Float for each activity
3. Critical Path and its duration.

OR

What are the common errors in drawing networks? Explain with the help of diagrams.

[CO-2] [L-3] 10

Q.4 (a) Define PCM and enumerate the planning process.

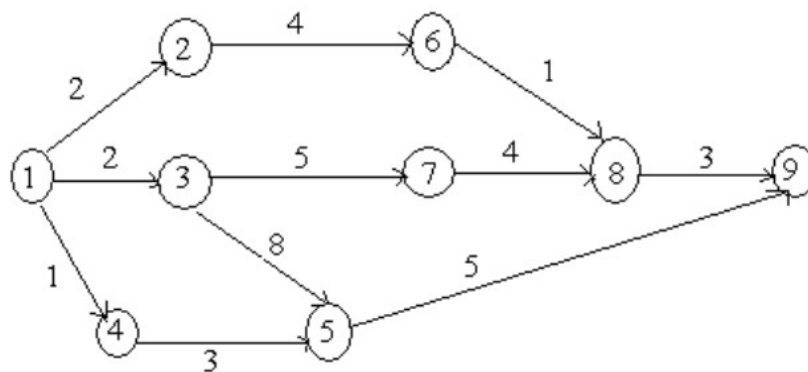
[CO-3] [L-3] 10

(b) Differentiate between Resource Smoothing and Resource Leveling

OR

Find the critical path and calculate the slack time for the following network.

[CO-3] [L-4] 10



Q.5 What is meant by Project Crashing? Enumerate Time Cost Relationship of an Activity with the help of diagram.

[CO-4] [L-2] 10

OR

Draw a network and Determine the Project Crashing for the following data:-

[CO- 4] [L-4] 10

Table 1. Activity Table

Sl No	Activity	Symbol	Preceding activity	Duration (Weeks)
1	Leveling the land	A	-	16
2	Stone pitching	B	A	26
3	Raising seedling	C	A	26
4	Establishment of irrigation system	D	A	30
5	Development of drainage system	E	C	28
6	Making pits and transplantation	F	B	27
7	Erection of fencing	G	D,E,F	18

Activity	Time in weeks		Cost in Rs.	
	Normal	Crash	Normal	Cost
A	16	11	36000	38000
B	26	18	27000	33000
C	26	21	8000	8900
D	30	23	135000	138570
E	28	20	20000	22400
F	27	23	12000	13700
G	18	12	35000	36500