KUMARAGURU
college of technology
character is life

M.E DEGREE EXAMINATIONS: NOV/DEC 2023

(Regulation 2018)

First Semester

CONSTRUCTION MANAGEMENT

P18CMT1003: Resource Planning and Management

COURSE OUTCOMES

CO1: The student is expected to govern the financial system of an organization.

CO2: To estimate the economic life of an asset with inflation effect.

CO3: To understand various methods of depreciation, tax and cost analysis of construction equipment followed by cost estimating.

CO4: To estimate the economic life of an asset with inflation effect.

CO5: To study the growth of MNC's in relation to the construction industry.

Time: Three Hours   **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1.   In Time Cost trade off function analysis _____.   CO1   [K1]

a)	Cost decreases linearly as time increases.	b)	cost at normal time is zero
c)	Cost increases linearly as time increases.	d)	cost at normal time is maximum

2.   Matching type item with multiple choice code   CO1   [K2]

List I	List II
A. Target Costing	i.Focuses on minimizing the total cost of ownership over the entire life cycle of a construction project.
B. Life Cycle Costing	ii. Utilizes a systematic process to identify and eliminate unnecessary costs while maintaining project value.
C.Value Engineering	iii.Sets predetermined cost targets during the planning phase and involves continuous monitoring to meet these targets.

D.Earned Value Management	iv.Integrates project cost, schedule, and performance metrics to provide a comprehensive view of project health.

a)	A-iii, B-i, C-iv, D-ii	b)	A-iv, B-iii, C-ii, D-i
c)	A-iii, B-i, C-ii, D-iv	d)	A-iv, B-ii, C-i, D-iv

3. In a construction project, the total work hours required are 6,000 hours. The project manager plans to employ 25 workers, and the average wage per hour is ₹400. Calculate the total labor cost for the project.   CO2   [K4]

a)	₹120,000	b)	₹150,000
c)	₹180,000	d)	₹200,000

4. Assertion (A): Efficient utilization of labor resources in construction projects involves accurate measurement of the actual resources required.   CO2   [K4]
Reason (R): The cost of labor and the labor schedule are interlinked factors that, when optimized, contribute to the effective utilization of labor, but this relationship may not be immediately apparent.

a)	Both A and R are true, and R is the correct explanation of A.	b)	Both A and R are true, but R is NOT the correct explanation of A.
c)	A is true, but R is false.	d)	Both A and R are false.

5. What aspects are accurately associated with the transportation of materials in the context of construction projects?   CO3   [K1]
A. It directly influences the cost of delivering construction materials.
B. It plays a crucial role in determining project timelines and construction schedules.
C. Environmental sustainability considerations are essential factors in transportation planning for construction materials.
D. The type of materials being transported is a primary determinant of the transportation method.

a)	A, B and C	b)	A, C and D
c)	B and D	d)	B,C and D

6. Assertion(A): The selection of material sources plays a crucial role in effective material management.   CO3   [K4]
Reasoning(R): Diversifying material sources can mitigate risks related to supply chain disruptions and fluctuations in material prices.

a)	Both A and R are true, and R is the correct explanation of A.	b)	Both A and R are true, but R is NOT the correct explanation of A.
c)	A is true, but R is false.	d)	Both A and R are false.

7. Matching type item with multiple choice code   CO4   [K5]

List I	List II
A. Cash Flow Projection	i.An estimate of how much cash will be generated or expended over a specific period.

B. Cost Control	ii. Monitoring and managing the inflow and outflow of cash within a project.
C.Earned Value Management	iii.A systematic approach to managing project costs, comparing actual performance with planned performance.
D.S-Curve in Project Management	iv.A graphical representation of cumulative costs or other performance criteria plotted against time.

a)   A-iii, B-iv, C-ii, D-iii   b)   A-ii, B-iii, C-i, D-iv

c)   A-ii, B-i, C-iv, D-iii   d)   A-iii, B-iv, C-ii, D-i

8. The Golden rule of material management is   CO4   [K4]

a)   2/3 at work site and 1/3 at eyesight   b)   1/3 at work site and 2/3 at eye sight

c)   1/2 at work site and 1/2 at eyesight   d)   3/4 at work site and 1/4 at eye sight

9. Which statements are true regarding resource leveling and smoothing?   CO5   [K1]
(i) Resource leveling aims to eliminate all resource peaks and troughs.
(ii) Resource smoothing focuses on minimizing resource fluctuations without altering the project timeline.
(iii.) Both resource leveling and smoothing contribute to a more predictable project schedule.
(iv) Resource smoothing may involve adjusting project timelines to optimize resource usage.

a)   Only (iv)   b)   (ii), (iii) and (iv)

c)   (i) and (ii)   d)   (i) and (iii)

10. Assertion (A): Cumulative cost in resource allocation accounts for all direct and indirect costs incurred throughout a project's duration.   CO5   [K4]
Reasoning(R): It serves as a comprehensive metric, considering the overall financial impact of resource decisions on the project budget.

a)   Both A and R are true, and R is the correct explanation of A.   b)   Both A and R are true, but R is NOT the correct explanation of A.

c)   A is true, but R is false.   d)   Both A and R are false.

PART B (10 x 2 = 20 Marks)

11. List the key elements considered in Time Schedule planning for resource management.   CO1   [K1]

12. Differentiate between Cost Control and Cost Management.   CO1   [K3]

13. Define system approach.   CO2   [K1]

14.	Narrate any one strategy that project managers can employ to ensure the optimum use of labor resources.	CO2	[K2]
15.	How does the selection of material sources contribute to effective material management?	CO3	[K1]
16.	Justify the statement "Time of purchase impacts material management decisions".	CO3	[K5]
17.	Define the critical path in project management.	CO4	[K1]
18.	What is meant by Personnel time?	CO4	[K1]
19.	Differentiate capital cost and operational cost with an example.	CO5	[K1]
20.	Define time-cost trade-off in resource planning and management.	CO5	[K1]

PART C (6 x 5 = 30 Marks)

21.	Compile on the challenges associated with Personnel Planning in resource management.	CO1	[K6]
22.	Explain different Classes of Labour in construction projects.	CO2	[K5]
23.	Identify and discuss common challenges associated with material management.	CO3	[K3]
24.	Explain "cashflow and cost control with reference to time management".	CO4	[K5]
25.	Discuss the importance of value management in resource planning.	CO5	[K5]
26.	Explain the factors to be consider in selecting equipment choice for a consummation project	CO5	[K5]

Answer any FOUR Questions
PART D (4 x 10 = 40 Marks)

27.	Analyze the interdependencies among different types of resources in the context of comprehensive Resource Planning.	CO1	[K4]
28.	Assess the methods used for measuring the actual resources required for labour in a construction project.	CO2	[K5]
29.	A dump truck with a capacity of 6 cubic yard is used to dispose of excavated materials. The distance from the dump site is 4 miles, and the average speed of the dump truck is 30mph. The job site productivity of the power shovel per day is 504 cubic yards, which will be modified by a swell factor of 1.1. The only factors affecting the job site productivity of the dump truck in addition to those affecting the power shovel are 0.80 for equipment idle time and 0.70 for management efficiency. Determine the job site productivity of the dump truck. If a fleet of such trucks is used to haul the excavated material, find the number of trucks needed daily.	CO3	[K4]
30.	Explain time management with respect to the planning, management and forecasting of time with neat flow charts.	CO4	[K5]
31.	Discuss the systematic resources leveling procedure with an example.	CO5	[K5]

****