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Register Number:……….…….

M.E DEGREE EXAMINATIONS: APRIL /MAY 2024

(Regulation 2018)

First Semester

CONSTRUCTION MANAGEMENT

P18CMT1003: Resource Planning and Management

COURSE OUTCOMES

CO1: Understand the various concepts of resource planning.

CO2: Understand the various approaches of labour management.

CO3: Analyze the planning and selection of various materials and equipment's for construction.

CO4: Apply the techniques of time management.

CO5: Allocate the resources for the construction projects.

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

Answer all the Questions:-
PART A (10 x 1 = 10 Marks)

1. Arrange the following steps in the correct sequence for resource planning: CO1 [K_2]
   a. Identification of resources
   b. Planning for material
   c. Procurement
   d. Planning for labor

   a)   c, a, b, d   b)   a, d, c, b

   c)   b, a, d, c   d)   d, b, a, c

2. Consider the following statements regarding resource planning: CO1 [K_1]

   Statement 1: Resource planning involves the identification and procurement of various resources.

   Statement 2: It primarily focuses on the allocation of financial resources.

   Statement 3: Effective resource planning contributes to project success by ensuring optimal utilization of resources.

   Statement 4: Money is the only resource considered in resource planning.

   a)   Statements 1 and 2   b)   Statements 1 and 3

   c)   Statements 2 and 3   d)   Statements 3 and 4

3. **Assertion:** Labor schedule is an essential tool in labor management.   CO2 [K_2]
   Reason: It helps in allocating work hours to specific tasks and ensures optimal use of human resources.

   a)   Both Assertion and Reason are true,   b)   Both Assertion and Reason are true, but
         and Reason is the correct explanation   Reason is not the correct explanation of
         of Assertion.   Assertion.

c) Assertion is true, but Reason is false.   d) Assertion is false, but Reason is true.

4. Match the labor type with its corresponding characteristic: CO3   [K$_2$]

List I	List II
A. Skilled labor	i. General tasks with minimal training
B. Semi-skilled labor	ii. Advanced education and specialized skills
C. Unskilled labor	iii. Limited training required
D. Professional labor	iv. Specific expertise and training

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

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

5. **Assertion:** Optimistic choice is a key criterion in equipment selection.   CO2   [K$_2$]
Reason: It involves planning and selecting equipment based on cost, time, source, and handling.

a) Both Assertion and Reason are true, and Reason is the correct explanation of Assertion.
b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
c) Assertion is true, but Reason is false.
d) Assertion is false, but Reason is true.

6. When planning for equipment in a project, what should be considered in optimistic choice?   CO3   [K$_2$]

a) Highest Cost   b) Longest Delivery Time

c) Cheapest Option   d) Shortest Time

7. What is the technique used to determine the critical path in project scheduling?   CO4   [K$_1$]

a) Gantt Chart   b) PERT Analysis

c) Resource Loading   d) Work Breakdown Structure

8. Match the cost management activity with its purpose: CO4   [K$_2$]

List I	List II
A. Monitoring and adjusting expenses	i. Control project expenses
B. Reducing project scope	ii. Enhance project profitability
C. Increasing costs	iii. Eliminate financial constraints
D. Ignoring budget constraints	iv. Maximize project scope

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

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

9. Evaluate the following statements about resource allocation in project management: CO5   [K$_2$]
Statement 1: Resource leveling involves balancing resource demands over time.
Statement 2: Resource smoothing is focused on adjusting resource assignments to avoid peaks.

Statement 3: Cumulative cost-value management is not related to resource allocation.

Statement 4: Resource list provides a detailed inventory of project resources.

a) Statements 1 and 2

b) Statements 1 and 3

c) Statements 2 and 3

d) Statements 3 and 4

10. Place the following resource allocation methods in the order of their application during project management: CO5   [K₂]

a. Resource smoothing

b. Resource leveling

c. Resource list

d. Resource allocation

a) c, d, b, a

b) b, a, c, d

c) d, c, a, b

d) a, b, d, c

PART B (10 x 2 = 20 Marks)

11.	How do the identification and procurement of resources contribute for a successful project execution?	CO1	[K₂]
12.	Name the key components of resource planning in project management	CO1	[K₁]
13.	Mention the significance of measuring actual resources required in labor management.	CO2	[K₂]
14.	How does the systems approach contribute for optimizing the utilization of human resources in a project?	CO2	[K₂]
15.	Mention the concept of optimistic choice and its role in equipment management.	CO3	[K₂]
16.	Given the practical implications of effective equipment planning.	CO3	[K₂]
17.	List the steps involved in personnel time management in project scheduling	CO4	[K₁]
18.	Explore the relationship between critical path analysis and project forecasting	CO4	[K₂]
19.	Compare and contrast resource leveling and resource smoothing in project management.	CO5	[K₂]
20.	Mention the significance of a resource list in project management.	CO5	[K₂]

PART C (6 x 5 = 30 Marks)

21.	Analyze the impact of resource constraints on project success with examples	05	CO1	[K₃]
22.	Develop a comprehensive labor management strategy for a construction project, including tools for measurement and optimization, and justify your choices.	05	CO2	[K₄]
23.	Evaluate the impact of transportation and delivery considerations on material management.	05	CO3	[K₂]
24.	Analyze the role of critical path analysis in managing project timelines, discuss potential risks, and propose mitigation strategies for effective time management.	05	CO4	[K₄]
25.	Evaluate the impact of time-cost trade-offs in project management, considering the implications on project schedules and costs, and propose strategies to achieve an optimal balance.	05	CO5	[K₃]

26. List three benefits of using computer applications in resource allocation for project management, and explain how these applications contribute to project efficiency.   05   CO1   [K₃]

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

27. Create a comprehensive resource management plan for a hypothetical project, addressing identification, procurement, and utilization strategies, and justify your choices.   10   CO1   [K₄]

28. Analyze the impact of globalization on labor management in multinational projects, considering cultural differences, legal constraints, and communication challenges, and propose strategies for effective cross-cultural labor management.   10   CO2   [K₄]

29. Design a material and equipment management plan for a large-scale infrastructure project, addressing time of purchase, quantity, and sourcing considerations.   10   CO3   [K₃]

30. Critically analyze the impact of scope changes on project schedules and costs, proposing change management strategies to minimize disruptions and maintain project efficiency   10   CO4   [K₃]

31. Investigate the historical evolution of resource allocation methodologies in project management, from traditional approaches to modern computer-based applications, and analyze the impact of technological advancements on resource optimization.   10   CO5   [K₄]

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