



B.E/B.TECH DEGREE EXAMINATIONS: NOV/DEC 2024

(Regulation 2018)

Sixth Semester

CIVIL ENGINEERING

U18CEI6202: Construction Project Management

COURSE OUTCOMES

CO1: Estimate the project duration and identify the critical path of the project.

CO2: Smoothen and level the resource demand during project execution.

CO3: Perform resource allocation and time cost optimization.

CO4: Manage equipment and machinery requirements.

CO5: Understand the quality control and safety during construction.

Time: Three Hours

Maximum Marks: 100

Answer all the Questions: -

PART A (10 x 2 = 20 Marks)

(Answer not more than 40 words)

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|--|-----|-------------------|
| 1. Discuss the unique challenges and considerations you would need to address in the project life-cycle | CO1 | [K ₂] |
| 2. List out the advantages of scheduling | CO1 | [K ₁] |
| 3. Distinguish between CPM and PERT methods of construction project scheduling | CO2 | [K ₂] |
| 4. Choose a construction project of your choice (e.g., a bridge, office building, etc.) and create a bar chart illustrating the key activities and their sequence. | CO2 | [K ₂] |
| 5. List down and explain in brief about the classifications of construction costs | CO3 | [K ₁] |
| 6. What are the objectives of resource allocation? | CO3 | [K ₁] |
| 7. Assess the ethical implications of prioritizing cost over project duration in time-cost optimization decisions. | CO4 | [K ₂] |
| 8. Define direct and indirect costs in the context of construction projects. | CO4 | [K ₂] |
| 9. What is total quality control in construction projects? | CO5 | [K ₂] |
| 10. Mention the difference between statistical quality control with sampling by attributes and sampling by variables. | CO5 | [K ₂] |

Answer any FIVE Questions:-

PART B (5 x 16 = 80 Marks)

(Answer not more than 400 words)

11. a) Sketch and explain the project life cycle in has holistic approach to project management 08 CO1 [K₃]
- b) Point out the current challenges faced in Construction project management. 08 CO1 [K₂]
12. a) Construct a network diagram for the activities given below: 16 CO2 [K₃]

ACTIVITY	PREDECESSORS	DUARTION
A	---	1
B	A	8
C	A	4
P	A	7
L	B	2
M	C	4
Q	P,C	4
N	P	9
Y	L,Q	5
F	M	10
J	Q	2
S	N	2
V	Y,F,J	5
T	V,S	1

Identify all the project times and floats of this project

13. a) Determine the total duration of the project and identify the no. of labours required for each day, based on the following table 8 CO3 [K₃]

Activit y	IPA	Durati on (Days)	Labor ers
A	-	5	2
B	-	7	4
C	A	3	3
D	A,B	5	3
E	C,D	2	2

- b) Explain the objectives and process of Recourse levelling and smoothing 8 CO3 [K₂]
14. a) Determine the cost slope and crash the project and identify the optimum cost after crashing for the following data 16 CO4 [K₃]

Activity	Predecessor	Normal Time	Normal cost	Crash Time	Crash Cost
A	-	2	1200	2	1200
B	A	5	1800	4	2400
C	B	6	1700	4	2100
D	B	7	1500	5	2200
E	E,F	4	1900	3	2400

15. a) Identify and analyze key safety challenges in the construction industry and explain how this safety management system can address these challenges to ensure a safe work environment and successful project outcomes 16 CO5 [K4]
16. a) Analyze how Total Quality Control (TQC) and Statistical Quality Control (SQC) methods, including Sampling by Attributes and Sampling by Variables, contribute to quality in construction projects. Provide examples to support your analysis 16 CO5 [K4]
