Register Number:……..

KUMARAGURU
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B.E. DEGREE EXAMINATIONS: APRIL / MAY 2023

(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)

1.	Define Project scope management	CO1	[K_1]
2.	Name the key steps involved in the project life cycle	CO1	[K_2]
3.	Identify the limitations of Bar chart planning	CO2	[K_2]
4.	Define Total Float	CO2	[K_1]
5.	Define Resource levelling	CO3	[K_1]
6.	Up to What extent the construction material can be saved?	CO3	[K_2]
7.	State the estimated costs associated with constructing a facility.	CO1	[K_2]
8.	Identify the time related to the PERT network.	CO2	[K_2]
9.	Write a short note on main causes of accidents.	CO5	[K_1]
10.	How do you improve in jobsite in construction?	CO5	[K_2]

Answer any FIVE Questions:-
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)

11.	a)	Discuss about the project management functions in construction.	08	CO1	[K_2]
	b)	Summarize the project bidding and budgeting in a construction project	08	CO1	[K_2]

12. a) A building project consists of 10 activities A,B,C…. etc. as listed in the following table. Normal duration of each activity along with the preceding activities are also given. 12 CO2 [K3]

Activity	Preceding activity	Estimated duration
A	--	5
B	A	2
C	A	6
D	B	4
E	B	4
F	C	2
G	C	3
H	D	8
I	E,F	7
J	G	2

Draw the network and determine the critical path and all floats.

b) Differentiate CPM and PERT models for project scheduling 04 CO2 [K2]

13. Consider a project with 7 activities as shown in the table below. The predecessors of each activity and the duration of the activities are given. The number of compressors (consider it as a resource) required by each activity is also listed. Carry out resource allocation and smoothening for the job. 16 CO3 [K3]

Activity	Predecessors	Duration (Days)	No.of Carpenters needed
A	-	3	6
B	A	2	1
C	B	5	5
D	B	4	2
E	C	9	4
F	C, D	2	4
G	E, F	1	6

14. A taxi hire company has one taxi at each of five depots a, b, c, d and e. A customer requires a taxi in each town, namely A,B,C,D and E. Distances (in kms) between depots (origins) and towns (Destinations) are given in the following distance matrix: Find the Total processing time. 16 CO4 [K3]

Origins/ Destinations	a	b	c	d	e
A	140	110	155	170	180
B	115	100	110	140	155
C	120	90	135	150	165
D	30	30	60	60	90
E	35	15	50	60	85

15. a) Write a detailed note on total quality control in construction 08 CO5 [K_2]

b) Illustrate the safety measures to be adopted in the construction sites. 08 CO5 [K_2]

16. a) Construct network and determine the optimum duration and optimum cost for a project with the relevant data is given below. Indirect cost is Rs.4000 per week. 12 CO4 [K_3]

Activity	Normal		Crash	
	Time (weeks)	Cost (Rs)	Time (weeks)	Cost (Rs)
1-2	3	12000	2	16000
1-3	6	18000	3	24000
2-4	2	20000	1	23000
3-4	4	16000	2	21000
4-5	5	30000	4	35000

b) Explain in what manner floats are useful in effective management of resources? 04 CO3 [K_2]

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