

Reg. No.

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B. E / B. TECH.DEGREE EXAMINATIONS, MAY 2023

Sixth Semester

CE18603 – CONSTRUCTION PLANNING AND SCHEDULING

(Civil Engineering)

(Regulation 2018)

TIME:3 HOURS

MAX. MARKS: 100

- CO1 Plan the activities in construction considering the technology and duration.
- CO2 Carry out the scheduling procedures using advanced scheduling techniques.
- CO3 Predict the problems related to cost control and accounting.
- CO4 Summarize the quality and safety concerns in construction.
- CO5 Reflect the different types of database management system to organize and use project information.

PART- A(10x2=20Marks)

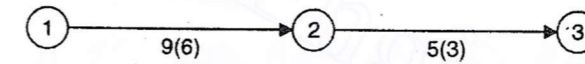
(Answer all Questions)

	CO	RBT LEVEL
1. What is meant by dummy activity?	1	1
2. State the significance of coding systems in construction planning.	1	1
3. What is meant by float?	2	1
4. List the different methods of scheduling.	2	1
5. Why the cost control and project monitoring is much needed during the construction?	3	1
6. How budgeted cost differs from the estimated total cost?	3	1
7. What is meant by quality circle?	4	1
8. What are the different factors to be considered during the construction in the aspect of safety?	4	1
9. List the different software used for project management.	5	1
10. Why accuracy in information is necessary?	5	1

PART- B (5x 14=70Marks)

	Marks	CO	RBT LEVEL
11. (a) Explain Work Breakdown Structure with neat sketch and narrate its importance in construction planning. Also develop WBS for residential apartment complex.	(14)	1	3
(OR)			
(b) Explain the method to estimate the activity duration for a construction project? And describe the various factors which decides the duration of activity.	(14)	1	3

12. (a) The following table gives the data for the duration and costs of each activity of a project network shown in figure below. The project overhead costs are ₹ 300/day. Determine the optimum duration of project and the corresponding minimum cost. (14) 2 3



Activity	Normal duration (weeks)	Normal Cost ₹	Crash Duration (weeks)	Crash Cost ₹
1-2	9	8000	6	9500
2-3	5	5000	3	5500

(OR)

- (b) Discuss the following in detail (14) 2 3
- A. Crashing and Time/Cost tradeoffs
 - B. Advanced scheduling techniques
 - C. Monte Carlo schedule simulation
13. (a) Describe in detail about the forecasting of activity cost control with a suitable example. (14) 3 3
- (OR)
- (b) Explain the method of preparing job status report for the G+5 building by assuming the necessary data. (14) 3 3
14. (a) Explain in detail about statistical quality control with sampling by attributes and sampling by variables. (14) 4 3
- (OR)
- (b) The data taken on three samples inspection lots are shown in table below (14) 4 3

Inspection Sample	No of Parts lot number per inspection sample lot	No of defects per inspection sample lot (c)
1	200	8
2	180	6
3	220	10

A common basis lot size of n =200 has been chosen. Determine the u, \bar{u} , UCL and LCL values.

15. (a) Explain in detail about the architecture of a database management system. (14) 5 3

(OR)

- (b) Explain how the information's can be organized using the computers with a suitable example. (14) 5 3

PART- C (1x 10=10Marks)

(Q.No.16 is compulsory)

16. The following table shows the activity relationships of a 8 event project and it's optimistic, most likely and pessimistic time estimates: (10) 1 5

Activity	Time Estimates		
	Optimistic	Most likely	Pessimistic
1-2	2	5	8
2-3	8	11	20
3-4	0	0	0
2-4	4	7	16
2-5	4	9	20
4-6	7	10	13
5-6	3	7	17
3-7	3	0	13
6-7	2	3	10
7-8	2	4	6

Determine the

- A. Critical path and its standard deviation.
- B. Probability of completion of project in 40 days.
- C. Time duration that will provide 95 % probability of its completion in time.
