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Code No. : 18122 B

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD*Accredited by NAAC with A++ Grade***B.E. (Civil Engg.) VIII-Semester Main & Backlog Examinations, June-2022****Construction Management and Administration (PE-VI)**

Time: 3 hours

Max. Marks: 60

*Note: Answer all questions from Part-A and any FIVE from Part-B***Part-A (10 × 2 = 20 Marks)**

Q. No.	Stem of the question	M	L	CO	PO																																																						
1.	What is organization structure and mention different types.	2	1	1	9,11																																																						
2.	Mention various functions or dimensions of construction management.	2	1	1	11																																																						
3.	Define project planning and scheduling. Differentiate between the two terms.	2	1	2	6,9,11																																																						
4.	What are the main differences between bar charts and networks?	2	1	2	1,11																																																						
5.	Why would a contractor accelerate a project?	2	2	3	9,11																																																						
6.	Define Earned value management.	2	1	3	11																																																						
7.	What are the main differences between lump-sum contract and cost reimbursable contract?	2	1	4	9,11																																																						
8.	Define tender form and tender notice. Differentiate between the two terms.	2	1	4	11																																																						
9.	For which decision environment is linear programming most suited?	2	2	5	2,11																																																						
10.	Discuss Slack and Surplus variables in Linear programming.	2	1	5	1,11																																																						
Part-B (5 × 8 = 40 Marks)																																																											
11. a)	Define construction management and discuss the various dimensions of construction management with suitable example.	4	3	1	11																																																						
b)	Illustrate the differences in approaches of various construction project management organization.	4	2	1	10,11																																																						
12. a)	For the following schedule, draw the network diagram, perform the CPM calculations, mark the critical path, and complete the table.	5	4	2	1,2,11																																																						
<table border="1"> <thead> <tr> <th>Activity</th> <th>Duration</th> <th>PA</th> <th>EST</th> <th>EFT</th> <th>LST</th> <th>LFT</th> <th>TF</th> <th>FF</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>3</td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>B</td> <td>7</td> <td>A</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>C</td> <td>4</td> <td>A</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>D</td> <td>5</td> <td>B</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>E</td> <td>8</td> <td>B & C</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Activity	Duration	PA	EST	EFT	LST	LFT	TF	FF	A	3	-							B	7	A							C	4	A							D	5	B							E	8	B & C										
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E	8	B & C																																																									
b)	What is the main concept of PERT and how does the PERT method work?	3	2	2	1,2																																																						

13. a)	Draw the network diagram and Crash the project to the optimal value. Consider the Indirect cost as Rs.5000/- per day.	5	4	3	1,3																														
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D	3	B,C	2	30000	35000																														
b)	Discuss the importance of schedule updating and earned value management.	3	3	3	1,11																														
14. a)	Describe the owner preparedness and responsibility for effective safety practices in construction projects.	4	2	4	6																														
b)	Discuss the following: i. Conditions of contracts ii. Work order	4	2	4	6,8																														
15. a)	Solve a problem using graphical linear programming and determine the optimal value of the decision variables. $\text{Maximize } Z = 4x_1 + 3x_2$ $\text{Material } 6x_1 + 4x_2 \leq 48 \text{ tons}$ $\text{Labour } 4x_1 + 8x_2 \leq 80 \text{ hours}$ $x_1, x_2 \geq 0$	5	4	5	3																														
b)	Briefly explain the importance of optimization in construction.	3	2	5	1																														
16. a)	Discuss the role of construction management team in execution of projects in time and within budget.	4	3	1	9,11																														
b)	What are the main advantages of arrow networks over node networks?	4	2	2	1																														
17.	Answer any <i>two</i> of the following:																																		
a)	Describe the need for schedule update in construction project with suitable example.	4	3	3	1,2																														
b)	Discuss the safety measures shall be considered for demolition of building.	4	4	4	6																														
c)	Explain the significance of simplex method in linear programming problems.	4	2	5	1,3																														

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M : Marks; L: Bloom's Taxonomy Level; CO; Course Outcome; PO: Programme Outcome

i)	Blooms Taxonomy Level - 1	20%
ii)	Blooms Taxonomy Level - 2	37.8%
iii)	Blooms Taxonomy Level - 3 & 4	42.2%

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