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Code No. : 18132 N/O

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD

Accredited by NAAC with A++ Grade

B.E. (Civil Engg.) VIII-Semester Main & Backlog Examinations, May-2023

Construction Management & 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 are the main objectives of the Construction Management?	2	1	1	11
2.	From the following list choose "Events" and "Activity". Survey of site, Maps prepared, Interior design started, Earthwork excavation, Electrical fittings completed, Plastering, laying of footing, painting 1 st coat finished.	2	2	1	1
3.	Explain Total Float, Free Float for a Network.	2	1	2	1
4.	Explain the Fulkerson's rules for numbering the nodes in any Network.	2	2	2	1
5.	Draw Direct cost, Indirect cost and a typical total cost curve for a project and show on it the optimum duration and minimum project cost.	2	1	3	1,11
6.	Explain the necessity of Updating a project and the when updating is necessary.	2	2	3	1,9,11
7.	Differentiate between Tender document and Tender notice.	2	1	4	11
8.	Explain the causes of accidents on a construction site.	2	1	4	11
9.	Explain the application of Linear Programming.	2	1	5	2
10.	Explain the importance of Slack and surplus variables in Linear programming	2	2	5	2
Part-B (5 × 8 = 40 Marks)					
11. a)	Explain the main principles for developing an organizations for effective and efficient working.	5	1	1	9,11
b)	Explain the Functions of Construction management.	3	2	1	9,11
12. a)	What is a Work Breakdown Structure? Show the WBS for construction of a single independent house.	3	3	2	1,9
b)	Construct a Network Diagram from the given activity. Calculate the Total Float and determine the critical path for the network.	5	3	2	3

Activity	Predecessor Activity	Duration (Days)
A	-	8
B	-	10
C	-	8
D	A	10
E	A	16
F	D,B	17
G	C	18
H	C	14
I	F,G	9

13. a) Explain the steps involved in the process of updating. 3 1 3 9,11
 b) Find the optimum cost and time for the project given below. Consider Indirect cost as Rs 100/- per day. 5 3 3 2,3

Node	Activity	Normal time (Days)	Crash time (Days)	Normal cost (Rs)	Crash cost (Rs)
1-2	A	4	2	400	500
1-3	B	8	5	800	980
1-4	C	3	2	600	700
2-5	D	10	6	500	600
3-5	E	8	6	800	950
4-5	F	7	4	700	1000

14. a) Explain different types of contracts in Construction Management. 5 2 4 8,9,11,12
 b) List the various safety measures to be adopted at the time of demolition of a building. 3 2 4 7,9
15. a) Differentiate between Graphical method and simplex method in Linear Programming. 3 3 5 1
 b) Solve the given linear programming problem by Simplex method: Maximize $Z = 50X_1 + 15X_2$ subjected to $5X_1 + X_2 \leq 100$, $X_1 + X_2 \leq 50$, $X_1 \& X_2 \geq 0$. 5 3 5 2,3
16. a) Explain the responsibilities of members in construction team. 4 1 1 8,9
 b) List the differences between CPM and PERT method of Network techniques. 4 2 2 1,5
17. Answer any *two* of the following:
 a) Write a short note Earned Value Management. 4 2 3 11
 b) Explain the main conditions of a construction contract. 4 2 4 8,9,12
 c) Solve the given linear programming problem by graphical method: Maximize $Z = 3X_1 + 2X_2$ subjected to $X_1 + X_2 \leq 4$, $X_1 - X_2 \leq 2$, $X_1 \& X_2 \geq 0$. 4 3 5 2,3

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

i)	Blooms Taxonomy Level - 1	30%
ii)	Blooms Taxonomy Level - 2	38.75%
iii)	Blooms Taxonomy Level - 3 & 4	31.25%
