VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD
B.E. (Civil Engg.) IV Year I-Semester Main Examinations, December-2017
Construction Management and Administration

Time: 3 hours　　　　　　　　　　　　　　　　　　　　　　　Max. Marks: 70

*Note: Answer ALL questions in **Part-A** and any **FIVE** from **Part-B***

Part-A (10 × 2 = 20 Marks)

1. List out the functions of construction Management.

2. What are the demerits of line & staff organization?

3. Mention the limitations of bar charts.

4. Mention the Fulkerson rules of node numbering.

5. Define 'Cost slope'. What does it indicate?

6. How are the weights assigned to three time estimates in expression of "Estimated activity duration".

7. Mention a few safety gadgets used in construction industry.

8. List out the advantages of negotiated contracts.

9. What is the main limitation associated with graphical method of solving LP?

10. Mention the role of surplus variable and slack variable.

Part-B (5 × 10 = 50 Marks)

11. a) Describe the principles of organization? 　　　　　　　　　　　　　　　[7]

　　b) What is the significance of construction Management? 　　　　　　　　　[3]

12. a) What is a bar chart? Brief any three of its limitations. 　　　　　　　　　[4]

　　b)

Activity	Duration (days)	Activity	Duration (days)	Activity	Duration (days)
1-2	16	4-7	3	8-9	14
2-3	5	4-10	2	9-10	2
2-4	1	5-7	2	10-11	2
3-6	1	6-7	2	10-12	3
4-5	0	7-8	4	11-12	0

Draw a network diagram and find out the critical path and total project duration for the following project data. 　　[6]

13. a) Explain the use of normal distribution curve in PERT problems. [3]

     b) The following table shows the list of activities along with their time estimates. [7]
        Activity Duration (Weeks)

Activity	Duration (Weeks)		
	t_o	t_m	t_p
1-2	3	6	15
1-6	2	8	14
2-3	6	12	30
2-4	2	5	8
3-5	5	11	17
4-7	3	6	15
5-8	1	4	7
6-7	3	9	27
7-8	4	19	28

Draw the network. Find estimated activity duration, variance of each activity, and slack for each event.

14. a) What are the important conditions of contract? [3]

     b) What are different types of organizations? Discuss their relative merits and demerits. [7]

15. a) Brief the steps in solving LPP by graphical method. [3]

     b) Solve the following problem by suitable LP (Linear programming) method. [7]

       Maximize

$$Z = 500X_1 + 600X_2$$

       Subject to

$$3X_1 + 2X_2 \leq 64$$
$$X_1 + 4X_2 \leq 68$$

       and $X_1, X_2 \geq 0$

16. a) Write a note on "Construction team". [7]

     b) What are the applications of CPM and PERT? [3]

17. Answer any *two* of the following:

     a) Briefly explain about 'Work order'. [5]

     b) What is an "Infeasible solution". Brief as to how it can be identified in graphical and Simplex methods. [5]

     c) Briefly explain about 'Project updating'. [5]

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