

FACULTY OF ENGINEERING**B.E. 4/4 (Civil) II-Semester (Main) Examination, April / May 2013****Subject : Construction Management and Administration****Time : 3 Hours****Max. Marks: 75****Note: Answer all questions of Part - A and answer any five questions from Part-B.****PART – A (25 Marks)**

1. List out the advantages and disadvantages of functional organization. (3)
2. What do you mean by a dummy activity ? Why it is used in networking? (3)
3. What is Work Breakdown Structure (WBS)? What is its significance? (3)
4. What do you mean by slack? Define clearly variance and standard deviation. (3)
5. State the five steps of the working methodology of critical path analysis. (3)
6. State and conventions followed in drawing network. (2)
7. Name the distribution followed by activity time in CPM and PERT model. (2)
8. State different types of organizational structure. (2)
9. Define 'Tender' document. (2)
10. When is a linear programming problem said to have an unbounded solution under graphical method? (2)

PART – B (5x10=50 Marks)

11. Discuss briefly the principles of organization. With the help of neat sketch explain Line and Staff Organizational Form. Give its relative advantages and disadvantages. (4+6)
12. Given is the following information regarding a project. (6+4)

Activity	A	B	C	D	E	F	G	H	I	J	K	L
Dependence	-	-	-	AB	B	B	FC	B	EH	EH	CDFJ	K
Duration (days)	3	4	2	5	1	3	6	4	4	2	1	5

Draw the Network Diagram and identify the Critical Path and Project Duration. Find the three types of float (viz. Total, Free and Independent) for each activity.

13. A small project consists of jobs as given in the table below. Each job is listed with its normal time and a minimum or crash time (in days). The cost (in Rs. per day) for each job is also given:

Job (i-j)	Normal Duration (in days)	Minimum (crash) Duration (in days)	Cost of Crashing (Rs. Per day)
1-2	9	6	20
1-3	8	5	25
1-4	15	10	30
2-4	5	3	10
3-4	10	6	15
4-5	2	1	40

- (a) What are the normal project length and the minimum project length?
- (b) Determine the minimum crashing cost of schedules ranging from normal length down to, and including, the minimum length schedule. That is, if L = Length of the schedule, find the costs of schedules which are L, L-1, L-2 and so on.
- (c) Overhead costs total Rs.60 per day. What is the optimum length schedule in terms of both crashing and overhead cost?

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- 14.(a) What are the essential features of a construction contract? (4+6)
(b) What are tender documents? Discuss briefly the contents of typical tender documents.
15. Use the Simplex method to solve the following LP problem
Minimize : $Z = 30x_1 + 20x_2$
Subject to constraints : $-x_1 - x_2 \geq -8$
 $-6x_1 - 4x_2 \leq -12$
 $5x_1 + 8x_2 = 20$
 $x_1, x_2 \geq 0$
16. Enumerate the factors that govern the choice of demolition method. Discuss in brief the various safety measures for the demolition of an existing building. (5+5)
17. Write short notes on any **two** of the following: (5+5)
(a) Construction Safety
(b) Bar charts
(c) LP in construction
(d) Beta distribution curve
