

**8E4033**

Roll No. : \_\_\_\_\_

Total Printed Pages : **4****8E4033**

B. Tech. (Sem. VIII) (Main / Back) Examination, April / May - 2011  
Civil Engineering  
8CE3 Project Planning & Construction Management

Time : 3 Hours]

[Total Marks : 80

[Min. Passing Marks : 24

*Attempt any five questions. Selecting one question from each unit.  
All questions carry equal marks. (Schematic diagrams must be  
shown wherever necessary. Any data you feel missing suitably be  
assumed and stated clearly.*

*Units of quantities used / calculated must be stated clearly.*

Use of following supporting material is permitted during examination.  
(Mentioned in form No. 205)

1. \_\_\_\_\_ Nil \_\_\_\_\_ 2. \_\_\_\_\_ Nil \_\_\_\_\_

### UNIT - I

- 1 (a) Discuss the important aspects of project planning. 8
- (b) Explain the importance of organization in construction projects. Discuss the superiority of line and staff organisation over the other systems. 8

OR

- 1 (a) What do you understand by Job layout ? What are the factors affecting the Job layout ? 5
- (b) Discuss different elements of Risk cost management. 5
- (c) Explain various function of construction project management. 6

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## UNIT - II

- 2 (a) Differentiate between the following :
- (i) Activities on Arrows (AOA) and activities on Nodes (AON) network diagrams
  - (ii) CPM and PERT techniques.
- 6**
- (b) A project consists of nine activities and the details about them are given below in the table 1. Draw the project network, number the events identify critical path and determine duration of the project.

**Table - 1**

Activity	A	B	C	D	E	F	G	H	I (Last)
Duration in weeks	8	6	3	7	5	6	3	10	5
Predecessor(s)	-	A	B	C	D	B	B	G	E,F,H

**10**

**OR**

- 2 A PERT network consists of seven activities. The optimistic time ( $t_o$ ), most likely ( $t_m$ ) and pessimistic time ( $t_p$ ) as estimated for different activities in weeks are given below in table 2.

**Table - 2**

Activity / Time	1-2	1-3	1-4	2-5	3-5	4-6	5-6
$t_o$	1	1	2	1	2	2	3
$t_m$	1	4	2	1	5	5	6
$t_p$	7	7	8	1	14	8	15

Draw the network. Determine critical path and standard deviation of project. What is the probability of completing the project 3 weeks earlier than the expected time.

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## UNIT - III

- 3 (a) Explain briefly the following terms :
- (i) Direct and indirect project cost
  - (ii) Normal and crash duration of an activity
  - (iii) Cost slope and total project cost curve

**6**



(b) What are objectives of resource allocation ? Differentiate between resource smoothing and resource levelling.

6

(c) Explain the term "Project Updating". Why is it necessary.

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OR

3 Write a brief note on Time-cost trade off. A project consists of eight activities including one dummy activity. The normal and crash time in days and cost in rupees for different activities are given in table shown below. Determine optimum duration and associated cost of the project. Indirect cost Rs. 80/- per day.

Activity	Normal Time (Days)	Crash Time (Days)	Normal Cost (Rs.)	Crash Cost (Rs.)
1-2	2	2	1,000	1,000
1-3	7	3	500	900
2-3	6	3	300	420
2-4	5	4	200	250
3-4	0	0	0	0
3-5	9	4	600	900
4-6	11	6	600	1000
5-6	6	3	700	910

Also draw the last-cost time scaled network.

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#### UNIT - IV

4 (a) Define Earnest Money Deposit (EMD) and Security Deposit (SD) related to tenders.

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(b) Write the procedure followed after inviting a bid.

4

(c) Discuss different types of tenders.

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OR

4 Write short notes on any four of the following :

(a) Types of contracts

(b) Contract Document and its legal aspects

(c) Determination of a contract

(d) Arbitration

(e) Contract Acts

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## UNIT - V

- 5 (a) Discuss the importance of safety in construction project management. 8
- (b) Mention the safety measures that should be followed in road construction with hot bitumen. 8

OR

- 5 (a) Define Project Management Information System (PMIS). Draw the structure of PMIS emphasising functional subsystems information. 6
- (b) Explain the environmental problems associated with transportation sector. Suggest the measures to mitigate the problems. 6
- (c) Explain the social and environmental problems posed by thermal power projects. 4
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