

Roll No .....

**CE-802 (GS)****B.E. VIII Semester**

Examination, May 2018

**Grading System (GS)****Construction Planning And Management***Time : Three Hours**Maximum Marks : 70*

- Note:** i) Attempt any Five questions.  
 ii) All questions carry equal marks.  
 iii) Assume suitable data, wherever needed.

1. a) Discuss the important aspects of project planning.  
 b) Explain the importance of organization in construction projects. Discuss the superiority of line and staff organisation over the other systems.
2. a) What do you understand by Job layout? What are the factors affecting the job layout?  
 b) Discuss different elements of Risk cost management.  
 c) Explain various function of construction project management.
3. a) Differentiate between the following:
  - i) Activities On Arrows (AOA) and Activities On Nodes (AON) network diagrams
  - ii) CPM and PERT techniques

- 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

4. A PERT network consists of seven activities. The optimistic time ( $t_0$ ), 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
$t_0$	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 weeks earlier than the expected time.

5. 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

[3]

- b) What are Objectives of Resource allocation? Differentiate between resource smoothing and resource levelling.
- c) Explain the term "Project Updating". Why is it necessary?
6. 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.

7. Write short notes on any four of the following:
- a) Types of contracts
- b) Contract Document and its legal aspects

[4]

- c) Determination of a contract
- d) Arbitration
- e) Contract Acts
8. a) Define Project Management Information System (PMIS).
- b) Draw the structure of PMIS emphasizing functional subsystems information.

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