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CE 131802

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(GIMT & GIPS)

Azara, Hatkhowapara,

Guwahati - 781017

Roll No. of candidate

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2019

B.Tech. 8th Semester End-Term Examination

Civil Engineering

CONSTRUCTION PROJECT MANAGEMENT

Full Marks – 100

Time – Three hours

The figures in the margin indicate full marks
for the questions.

Answer Q.No. 1 and any six from the rest.

1. Choose the correct answers from the following
MCQs: (1 × 10 = 10)

- (i) CPM network is
- (a) event oriented
 - (b) activity oriented
 - (c) slack oriented
 - (d) float oriented

[Turn over

(ii) Which of the following does not represent an activity?

- (a) Site located
- (b) Foundation is being dug
- (c) The office area is being cleaned
- (d) The invitations are being sent

(iii) Total Project Cost

- (a) increases with time
- (b) reduces with increase in time
- (c) initially reduces with time and then increases with further increase
- (d) initially increases with time and then reduces with further increase

(iv) For a given activity, the optimistic time, pessimistic time and the most probable estimates are 5, 17 and 18 days respectively. The expected time is:

- (a) 8 days
- (b) 9 days
- (c) 10 days
- (d) 15 days

(v) In CPM analysis, the crashing of the activities along the critical path is done starting with the activity having

- (a) Longest duration
- (b) Highest cost slope
- (c) Least cost slope
- (d) Shortest duration

- (vi) Interfering float is the difference between
- (a) Total float and Free float
 - (b) Total float and Independent float
 - (c) Free float and Independent Float
 - (d) None of the above
- (vii) Power stations are generally treated as
- (a) Light construction
 - (b) Heavy construction
 - (c) Industrial construction
 - (d) Electrical construction
- (viii) The direct cost of a project with respect to normal time is
- (a) Minimum
 - (b) Maximum
 - (c) Zero
 - (d) Infinite
- (ix) Various activities of a project are shown on bar charts by
- (a) Vertical lines
 - (b) Horizontal lines
 - (c) Dots
 - (d) Crosses
- (x) Military organization is known as
- (a) Line organization
 - (b) Line and staff organization
 - (c) Functional organization
 - (d) None of the above

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2. Answer the following questions :

- (a) What are the basic resources of Construction Management? (3)
- (b) Define cost benefit analysis. (4)
- (c) What is meant by earnest money deposits and security money deposits? (4)
- (d) Discuss the critical path method of project planning. (4)

3. Answer the following questions:

- (a) What is a contract? Briefly discuss the essential particulars by which all agreements are to be made to constitute a valid contract. (1 + 6 = 7)
- (b) Discuss item rate contract, percentage rate contract, turn-key contract and lump sum contract. (8)

4. Answer the following questions:

- (a) Differentiate between CPM and PERT. (5)
- (b) A project consist of 16 activities having their predecessor relationship as given below:

Draw the network and number the events.

- (i) A is the first activity
- (ii) B C & D follow A and can be done concurrently
- (iii) E & G cannot begin until C is completed, and can be performed simultaneously
- (iv) F is the immediate successor to activities B & E
- (v) H & K run in parallel, and both succeed G

- (vi) L succeeds F&H
- (vii) I & J are immediate successor to activity D
- (viii) M & N are immediate successor to I & K. However, both M and N can be performed concurrently
- (ix) Activities O & P are the last activities. O is the immediate successor to N and L. P is the immediate successor to M and J. (10)

5. Answer the following questions:

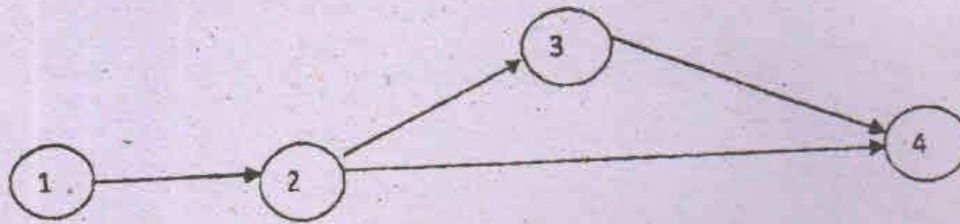
- (a) What is job layout? Discuss the factors to be considered in preparing job layout. What are its advantages? (2 + 4 + 2 = 8)
- (b) What is prequalification process? (3)
- (c) What is feasibility study? What is its importance? (2 + 2 = 4)

6. Answer the following questions:

- (a) The duration and cost for various activities of a project are given below.

Activity	Normal duration	Normal cost	Crash duration	Crash cost
1-2	4	4000	2	12000
2-3	5	3000	2	7500
2-4	7	3600	5	6000
3-4	4	5000	2	10000

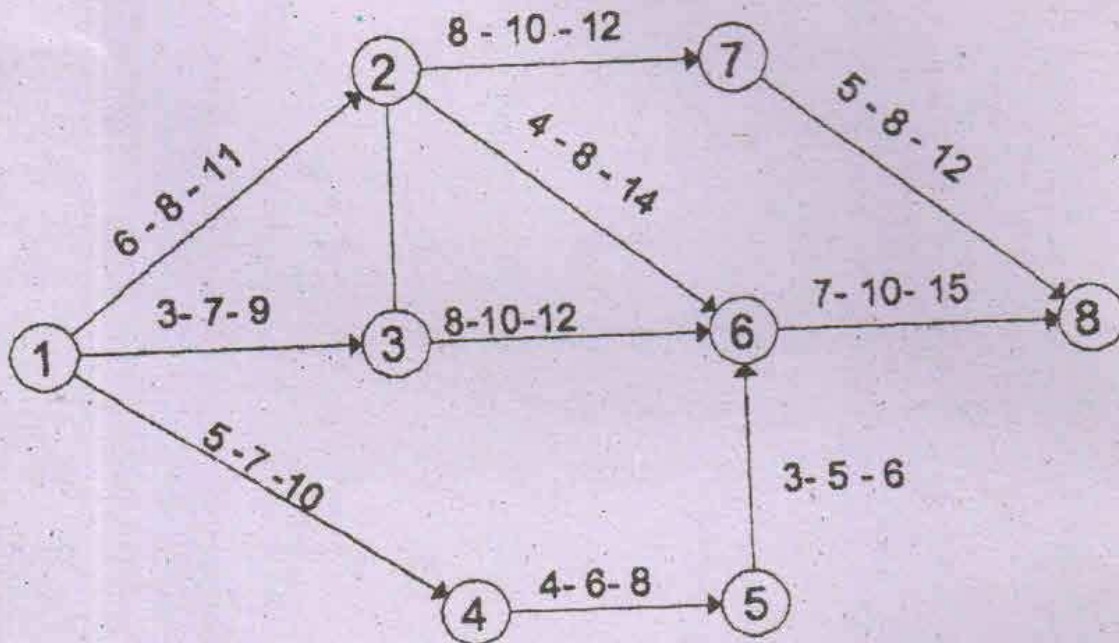
The project overhead costs are Rs. 2,000 per week. Find the optimum duration and cost associated with it. Also draw the time scale network. The network diagram is given below: (10)



(b) Discuss safety measures to be taken during bituminous work. (5)

7. Answer the following questions:

(a) The network for a certain project is shown in the figure below. Determine the expected time for each path. Which path is critical? (10)



- (b) For a particular activity of a project, time estimates received from two engineers X and Y are as follows :

Engineer	Optimistic time	Most likely time	Pessimistic time
X	4	6	8
Y	3	5	8

State who is more certain about the time of completion of the job. (5)

8. Answer the following questions :

- (a) What do you mean by quality control of a project? What is the need for inspection? (2 + 3 = 5)
- (b) Discuss fire safety in a building. (5)
- (c) Explain the different types of specification and their importance in a construction project. (5)

9. Answer the following questions:

- (a) Discuss how you would finally select a suitable contractor for execution of a major work. (6)
- (b) What is arbitration? What is its advantage? (2 + 2 = 4)
- (c) Explain the purpose and important activities of different stages in construction. (5)

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