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Total No. of Pages : 03

Total No. of Questions : 09

B.Tech.(CE) (2011 Onwards) (Sem.-4)

CONSTRUCTION MACHINERY AND WORKS MANAGEMENT

Subject Code : BTCE-402

Paper ID : [A1172]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A**1. Write briefly :**

1. What are the short comings of bar chart?
 2. Define Dummy.
 3. What is meant by the “optimistic time estimate”?
 4. What is meant by “critical path” in CPM?
 5. Define the term “cost slope”.
 6. What do you mean by LOB technique?
 7. Differentiate between independent float and interfering float.
 8. What is meant by resource smoothing?
 9. List two advantages of two wheel type tractors.
 10. What is meant by truck cycle time?
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SECTION-B

2. What are the principles of planning? Discuss the role of planning at different stages of a project.
3. What are the different types of network scheduling? Give examples.
4. What are the advantageous and disadvantageous of network analysis over other techniques?
5. Prepare the network for a construction project of 12 activities A, B, L, the precedence relationship is as follows :
 - A and B are performed parallel
 - A must be performed before C, D and E
 - F cannot be started before D is finished
 - G follows C and D
 - F must be finished before H and I started
 - E and K precede J
 - G and I precede K
 - L depends on J and K being complete and the project completes when L and B are completed.
6. What are Hoisting equipment? Discuss **any two** of the commonly used hoisting equipment.

SECTION-C

7. For the construction of a health centre building the following activities are to be performed:

Activities	Duration (weeks)
P	1
Q	3
R	1
S	3
T	5
U	3
V	4
W	3

Activities P and Q can be performed in parallel; activities R and S cannot start until P is complete : T cannot start until half the work of the activity R is complete; activity U can start only after activity S is complete; activity N succeeds activity R and activity W which is the last activity succeeds T.

- I. Draw the Bar Chart
 - II. What is the total completion time of the project? Explain how you can improve upon the limitations of the use of the chart.
8. Construct a PERT network of the above project and compute the earliest start time for each activity. What is the probability of completing the project 2 weeks earlier than the expected completion time?
 9. Write short notes differentiating the following :
 - a) Earliest start time and earliest finish time
 - b) Normal time and Crash time
 - c) Back hoe and bull dozer
 - d) Belt conveyor and aerial ropeways