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43 (B.ARCH-8)8-4

2015

**CONSTRUCTION MANAGEMENT**

Paper : ARC-8-6

Full Marks : 100

Time : Three hours

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

1. Write short answer : **(any five)**      5×2=10
  - (a) Define 'Scheduling'.
  - (b) Differentiate between CPM and PERT.
  - (c) Define "Latest Event Time"
  - (d) What is the formula for deriving "Cost Slope" ?

Contd.

(e) Is there a need for mechanization ? Justify.

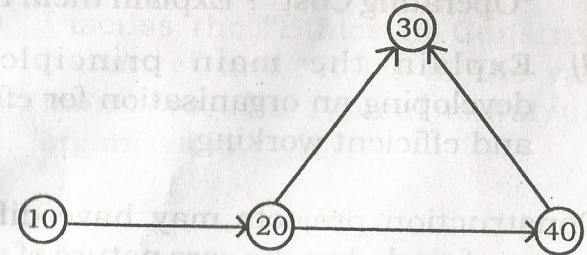
(f) What are the two important factors for selection of Construction Equipment ?

2. (a) Determine the project completion time and isolate the critical path for a project with the following activities. 10

Activity	Duration	Logic
1-2	5	1-2 & 1-3 are starting activities & can be taken
1-3	10	up simultaneously
2-4	0	Dummy activity
2-7	10	1-2 precedes 2-7
3-5	5	1-3 precedes 3-5 & 3-6
3-6	4	3-5 & 3-6 are concurrent
4-7	5	1-2 precedes 4-7
5-7	8	5-7 follows 3-5
6-7	9	3-6 precedes 6-7

Or

(b) For the project network shown in figure below and the data given below, determine the optimum time duration and optimum cost. Also plot a curve of total cost vs time and indicate on it the optimum time and optimum cost. 10



Data

Activity	Normal Time ( $T_n$ days)	Crash Time ( $T_c$ days)	Normal Cost ( $C_n$ )Rs	Crash Cost ( $C_c$ )Rs	Cost Slope Rs. per day
10-20	4	3	400	600	200
20-30	5	2	300	750	150
20-40	7	5	360	540	90
30-40	4	2	500	1000	250

Indirect Cost = Rs. 250 per day.

3. Explain the following : 5×4=20

(a) Work Break Down Structure with an example of a construction project.

(b) Various types of lifting cranes and various uses of tower crane in construction industry.

(c) What constitutes "Ownership Cost" & "Operating Cost"? Explain them briefly.

(d) Explain the main principles for developing an organisation for effective and efficient working.

4. 'Construction projects may have different scopes of work, but the core nature of project implementation is very similar'. Discuss this statement with respect to : 15

(a) phases of projects, and

(b) Stakeholders involved on the project.

5. Differentiate between centralized and decentralized forms of a construction company. Discuss the important traits of a "Construction Project Manager". 15

6. (a) What are the different types of Crushers? Explain them briefly with sketches. 15

Or

(b) What are the different types of equipment used for Compaction? Explain them briefly.

7. (a) Explain "Planning" and "Scheduling" in Construction Management. What are the different "Scheduling Techniques"? 15

Or

(b) Discuss the "Ethics in Construction industry" and "Roles of the various members of a typical construction organization."