

B.TECH. SEM -V (CIVIL) 2014 COURSE (CBCS) : WINTER - 2017
SUBJECT : ENGINEERING PROJECT MANAGEMENT

Day : **Tuesday**
 Date : **16/01/2018**

Time **02.30 PM TO 05.30 PM**
 Max. Marks : 60

W-2017-2123

N.B.

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Use of non-programmable calculator is allowed.
- 4) Assume suitable data if necessary.

- Q.1** a) What are the stages in project life cycle discuss briefly? (05)
 b) What are the importance of organization? (05)

OR

- a) Enlist different types of organization and explain any one. (05)
- b) Enlist different functions of management and explain planning and staffing. (05)

- Q.2** Draw the network, find out critical path, total float and free float for the given activities. (10)

Activity	1-2	1-3	1-4	2-3	2-6	3-5	3-6	4-5	5-6
Duration (weeks)	3	4	14	10	5	4	6	1	1

OR

- Draw the network and calculate the T_E , T_L and slack for PERT. (10)

Activity	1-2	1-6	2-3	2-4	3-5	4-5	6-7	5-8	7-8
Duration (to)	2	2	5	1	5	2	3	2	7
(days) (tm)	5	5	11	4	11	5	9	2	13
(tp)	14	8	29	7	17	14	27	8	31

- Q.3** The following table gives data on normal time and cost and crash time and cost for a project. Draw the network and find duration optimum cost and optimum duration. Indirect cost is Rs.1000/- per day. (10)

Activity	Normal		Crash	
	Time (days)	Cost (Rs.)	Time (days)	Cost (Rs.)
1-2	6	60	4	100
1-3	4	60	2	200
2-4	5	50	3	150
2-5	3	45	1	65
3-4	6	90	4	200
4-6	8	80	4	300
5-6	4	40	2	100
6-7	3	45	2	80

OR

- a) Explain with suitable example resource levelling, resource allocation and histogram. (05)
- b) Draw the flow chart of updating of network and explain it briefly. (05)

P.T.O.

- Q.4** a) A company needs 2000 units per month cost of placing an order is Rs. 40. In addition to Rs. 0.50 the carrying cost are 10% per unit of average inventory per year. The purchase price of Rs. 10 per unit. Find the economic order quantity. (05)
- b) Discuss ABC analysis with suitable example. (05)

OR

- a) An item is produced at the rate of 50 items per day. The demand occurs at the rate of 25 items per day. If the set up cost is Rs. 100 per set up and holding cost is Rs. 0.01 per unit of item per day. Find the economic lot size for one run, assuming that shortage are not permitted. Also find time cycle and minimum total cost for one run. (05)
- b) Explain inventory classification. (05)

- Q.5** Find the solution of the following problem graphically. (10)

$$\begin{aligned} \text{Minimize } Z &= -3x_1 + 2x_2 \\ \text{Subject to } & 0 \leq x_1 \leq 4 \\ & 1 \leq x_2 \leq 6 \\ & x_1 + x_2 \leq 5 \end{aligned}$$

OR

Solve by Simplex method (10)

$$\begin{aligned} \text{Minimize } Z &= 4x + 2y \\ \text{Subject to } & x + 2y \geq 2 \\ & 3x + y \geq 3 \\ & 4x + 3y \geq 6 \\ & x, y \geq 0 \end{aligned}$$

- Q.6** a) Explain six sigma concept. (05)
- b) What are the various quality standards? (05)

OR

- a) Give the application of MIS in construction industry. (05)
- b) What is check list and inspection report? (05)

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