Q.P. Code:13995

80 Marks   3 Hours

Note: 1. Attempt any 4 Questions
       2. Figures to the right indicate marks
       3. Attempt sub questions in order

1. a) Elaborate on the site mobilization techniques required for Commercial [05]
      Mall construction project in the heart of the city.
   b) Write short note on: Application of MIS to construction. [05]
   c) Write short note on: Personal Protective equipment. [05]
   d) Elaborate the significance of mass haul diagram with an example. [05]
2. a) Explain in detail with example procedure involved in method study. [06]
   b) Discuss in detail the various causes of accidents on construction site. [06]
   c) Write short note on: co-ordinating, communicating and reporting techniques. [08]
3. a) Discuss in details various functions of management. [05]
   b) Explain Line of balance technique with an example. [07]
   c) An R&D project has a list of tasks to be performed whose estimates are given [08]
      in the table below

Activity	Activity Name	T_o(days)	T_m(days)	T_p(days)
1-2	A	5	6	8
1-3	B	2	3	8
1-4	C	6	8	14
2-4	D	1	2	3
3-4	E	6	7	9
3-5	F	6	7	11
4-6	G	3	6	7
4-7	H	4	10	12
5-7	I	2	4	6
6-7	J	2	9	12

Z factor	Probability
-3	0.0013
-2	0.0227
-1	0.1587
0	0.5000
1	0.8413
2	0.9773
3	0.9987

   i.   Draw the project network and find the critical path.
   ii. Find the probability of completing the project in 21 days.
   iii. Find the duration required for the project corresponding to 75%
        probability.

[TURNOVER

4. a) Discuss the significance of merit rating in construction industry. [06]

   b) The following data pertains to a construction project which needs a number of [14] skilled workers to carry out certain activities:

Activity i-j	Duration (weeks)	Number of workers
1-2	3	4
1-4	2	4
1-7	2	3
2-3	4	2
3-5	6	3
3-9	9	7
4-5	5	5
4-8	8	4
5-6	4	6
6-9	3	6
7-8	5	3
8-9	6	2

   i. Carry out Resource Smoothing.
   ii. Find EFR for the EST solution.
   iii. Find the optimal solution using Burgess rule

   Calculate Resource Utilization Factor of the solution thus obtained.

5. a) Explain in brief Fayol's 14 principles of management. [08]

   b) Write short note on: Role & Responsibilities of project manager. [06]

   c) Define the term Job evaluation. Discuss any two methods of job evaluation. [06]

6. a) Define work break down structure. Draw work break down structure for dam construction. [06]

   b) Write down application of PRIMAVERA & MSP in construction management [06]

   c) Explain project life cycle phases in construction of expressway [08]