Kaushal kr.

COURSE CODE: 18B1WCE531   MAX. MARKS:35

COURSE NAME: Construction Technology and Management

COURSE CREDITS: 3   MAX. TIME: 2.0 Hrs

Note: All questions are compulsory. Carrying mobile phone or sharing of materials during examinations will be treated as case of unfair means.

Q 1. Differentiate between **a).** *Float and Slack* **b).** *Total Float and Independent Float.*   **[3 Marks]**

Q 2. Discuss the limitations of Bar Chart Method of project management.   **[3 Marks]**

Q 3. Draw the Network Diagram from the events relationship given in the Table below' **[3 Marks]**

| Event	Immediate Predecessor	Duration (weeks)	Event	Immediate Predecessor	Duration (weeks)
1	-	2	6	3, 5	2
2	1	3	7	3, 4	3
3	2	1	8	3, 7	1
4	2	2	9	7	3
5	2	4	10	3, 6, 8, 9	2

Q 4. In the following network, the optimistic, the most likely and the pessimistic time estimates are given for each activity. If 10 and 100 are the starting and ending events respectively. Find the critical path through the network.   **[10 Marks]**
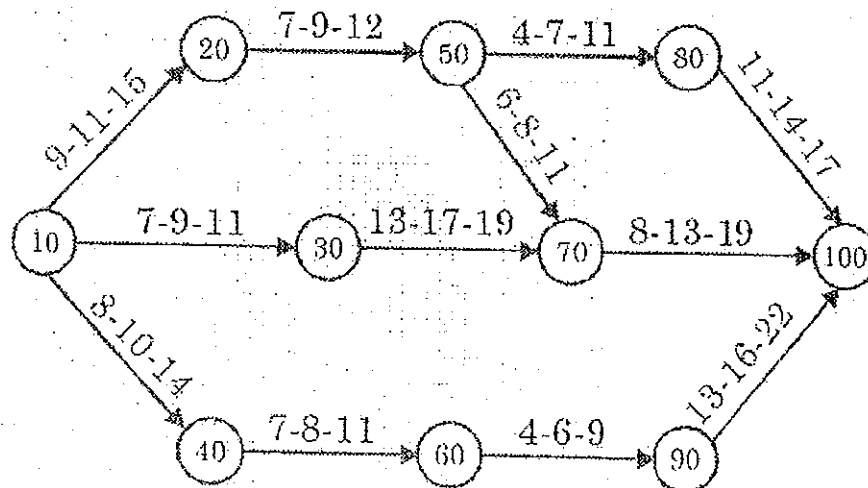
i. Show the critical path and determine the expected completion time.

ii. What is the probability of the project being completed in 53 days? Probability may be linearly interpolated from the table of probability factors (Z).

Z	1.0	1.5	2.0	2.5	3.0
Probability	84.13	93.32	97.72	99.38	99.87

Q 5. From the network given below indicates activity description along with its time duration. Calculate (a) Total Float (b) Free Float (c) Independent Float (d) Project duration and identify critical path for both the projects.

[8 Marks]
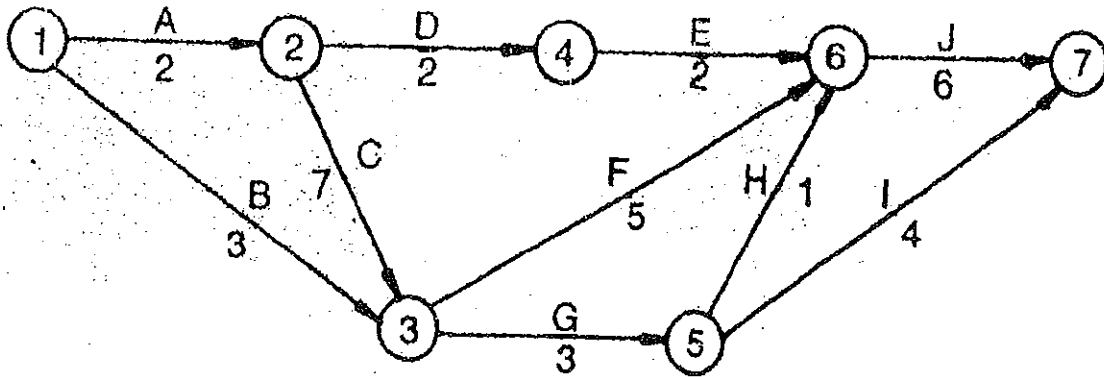
Q 6. From the given table below, find project's minimum cost and Optimum duration *using graph paper*

Activity	Normal Duration (weeks)	Normal Cost (Rs.)	Crash Duration (weeks)	Crash cost (Rs.)
1 - 2	7	7000	3	14500
1 - 3	8	4000	5	8500
2 - 3	5	6000	1	9000
2 - 4	5	8000	3	15000
3 - 4	6	5000	3	11000

The overhead cost of project is Rs. 428.57 per day. Draw time-scale curve for each stage.

[8 Marks]

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