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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION

M.Tech. (CM) I<sup>st</sup> Semester

COURSE CODE: 10M11CE113

MAX. MARKS: 25

COURSE NAME: Construction Planning and Control

COURSE CREDITS: 03

MAX. TIME: 1.5 Hour

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

Q.1. A typical small house construction project consists of the following operations along with the time set for its completion (6)

Sr. no.	Operation	Time (in days)
1	Survey, design and layout	3
2	Construction of foundations	5
3	Construction of superstructure	11
4	Roofing	5
5	Fixing doors and window frames	2
6	Plumbing and house drainage	3
7	Electric fitting	3
8	Plastering	4
9	Flooring	4
10	Carpentry work	4
11	Construction of boundary wall	3
12	Land shaping and clearing	2
13	White washing	3
14	Inauguration	1

The project commences on Wednesday, 14<sup>th</sup> October. Assuming five working days in a week, prepare Gantt bar chart of the project. State the assumptions made. Also determine

- Total time and date of completion of project.
- Expected progress by 10<sup>th</sup> November.

Q.2. Define

- Optimistic time estimate
- Pessimistic time estimate
- Most likely time estimate

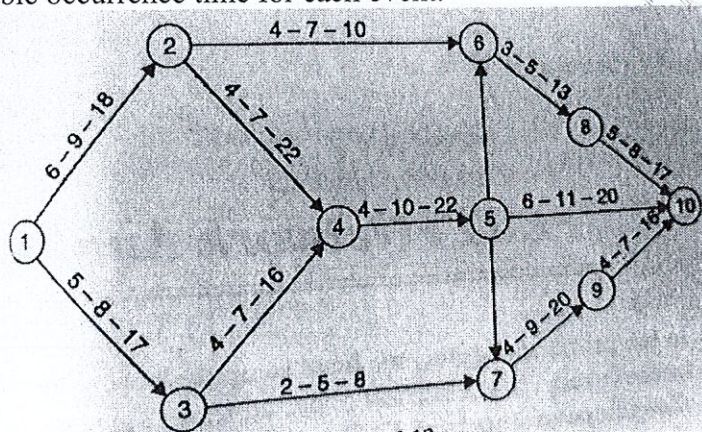
The time estimate for four activities are as follows-

	Optimistic time	Pessimistic time	Most likely time
A	27	37	51
B	26	37	53
C	25	36	46
D	28	36	52

Determine expected time and variance for each activity. Which activity has more reliable time estimates? (6)

Q.3 The network for a construction project is shown in figure. The three time estimates for each activity are given along each activity arrow. Compute (6)

- Expected time of completion of each activity.
- Earliest expected time for each event
- Latest allowable occurrence time for each event.



Q.4 Define slack and critical path. (7)

Determine the critical path for the network shown in figure. Numbers indicate time in weeks.

