JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATIONS-2022

B.Tech-VIII SEMESTER (Civil)

COURSE CODE: 21B1WCE832 (3) MAX. MARKS: 35

COURSE NAME: CONSTRUCTION PLANNING AND CONTROL

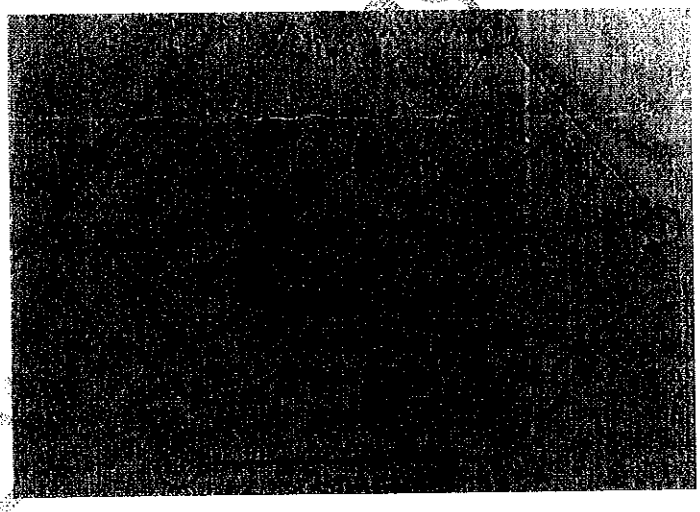
COURSE INSTRUCTORS: Mr. Akash Bhardwaj MAX. TIME: 2 Hours

Note: *All questions are compulsory. Marks are indicated against each question in square brackets.*

Q1. For the network shown below, assume that after working 10 days on the project, the following conditions exist at the end of 10 days-

a) Activities 1-2, 1-3 and 1-4 are complete as originally planned.
b) Activity 4-5 is in process and will complete in 6 more days.
c) Activity 4-6 is in process and will need 6 more days for completion.
d) Activity 3-6 is in process and will complete in one day.
e) Other activities have not been commenced and their original prediction will hold good, except for activity 5-7 which require only three days instead of 5 days as originally planned.

Update the network and determine the critical path of updated network. What is the total increase in project duration?



[8 marks]

Q2. Table gives the information about various activities of the network shown below:

Activity	Normal Duration (days)	Normal Cost (Rs.)	Crash Duration (days)	Crash Cost (Rs.)
1-2	10	8000	5	10000
2-3	5	4000	3	5000

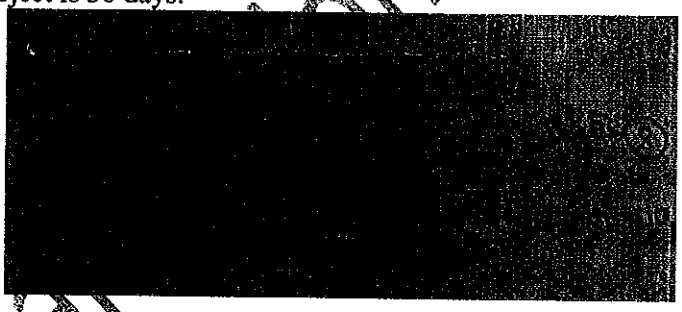
The project overhead cost is @Rs 500 per day. Determine (a) direct cost-duration relationship, (b) total cost-duration relationship and the corresponding least cost plan (network). **[8 marks]**

Q3. A building project consists of 10 activities, represented by the network shown below. The normal durations of the activities are given in table below. Compute (a) EST, LST, EFT and LFT, (b) Total float. Also, determine the critical path.

Activity	Estimated Duration	Activity	Estimated Duration
A	5	F	2
B	2	G	3
C	6	H	8
D	4	I	7
E	4	J	2

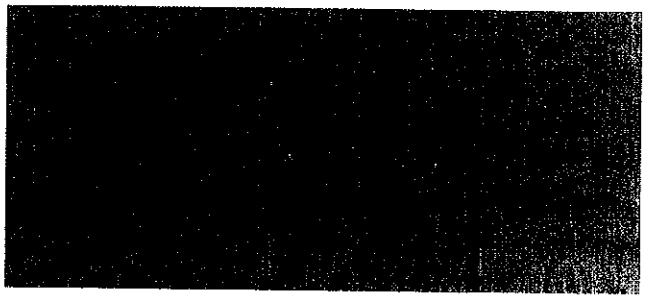
[10 marks]

Q4. For the given network, determine slack for each event and critical path. The scheduled date of completion of project is 36 days.



[4 marks]

Q5. For the network shown, determine the expected time for each path. Which path is critical?



[5 marks]