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UPES

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2017

Program:	B.Tech Civil Engg	**Semester –**	**V**
Subject (Course):	Construction Planning and Management	**Max. Marks**	**: 100**
Course Code	**:** CIV 3004	**Duration**	**: 3 Hrs**
No. of page/s: 04			

Section A (Attempt All Questions)

1. Define characteristics of "Line & Staff organisation". What are its advantage & disadvantage? **[2]**

2. What is project management? Describe various phases of project management. **[2]**

3. In what way does a CPM network is differ from PERT network? **[2]**

4. Write short note on Quality Control (QC) in project & purpose of checklist in QC. **[2]**

5. Define two approaches of resource allocation for their optimum utilization in Project. **[2]**

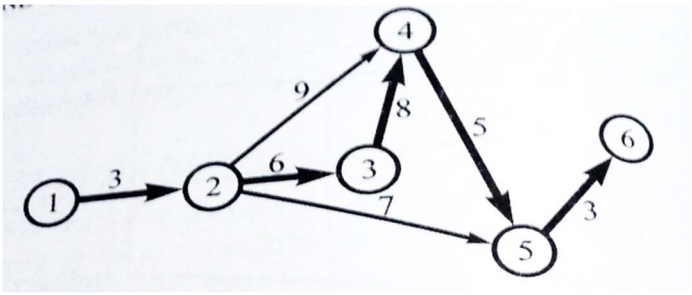
6. Define Project Risk management & define steps involved. Explain the process of Identifying Risk for project. **[5]**

7. A Project consists of 8 activities M, N, O, P, Q, R, S and T. Draw the network and number the event using Fulkerson rules if: **[5]**

   a) Activities M, N and Q can start concurrently
   b) Activities O & P are concurrent, and depend on the completion of both M & N
   c) Activities R & S are concurrent and depend on the completion of O.
   d) Activity T depends upon the completion of P, Q and R.
   e) The project is complete when S & T are done

SECTION B (Attempt All Questions)

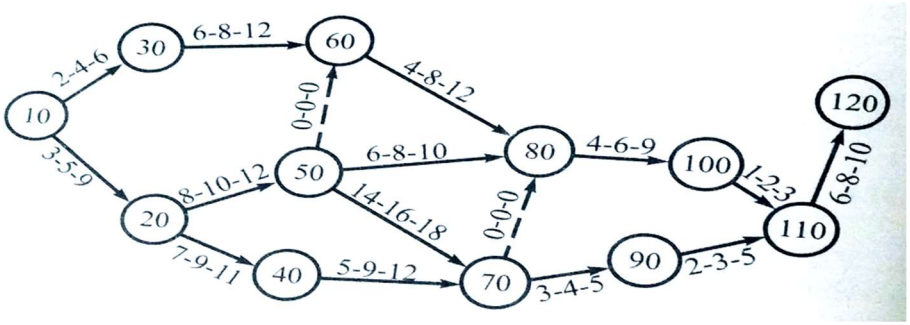
8. For the below mentioned project network, determine the optimum duration & the corresponding minimum cost. **[10]**



Activity	Normal Duration (weeks)	Normal Cost ($.)	Crash Duration (weeks)	Crash Cost ($.)
1-2	3	360	2	400
2-3	6	1440	4	1620
2-4	9	2160	5	2380
2-5	7	1120	5	1600
3-4	8	400	4	800
4-5	5	1600	3	1770
5-6	3	480	2	760

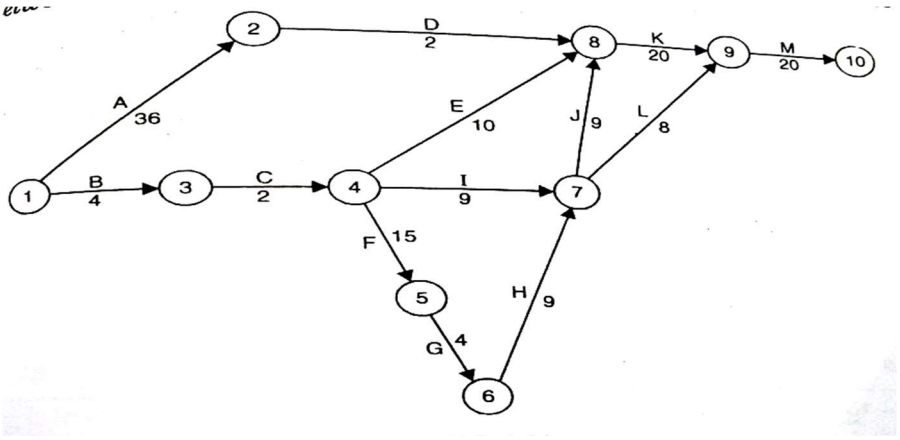
The direct cost for the project is $. 160/- per week. For the below mentioned project network, determine the optimum duration & the corresponding minimum cost.

9. The three time estimates are indicated along the activity arrow for the project shown below. Calculate (a) the expected or average time t_E and the variance for each activity, (b) the earliest expected time, and (c) the latest allowable time for each event. Make the entries in a tabular form. **[10]**



10. What is project management? What are three phases of project management? Define all phases in brief. **[10]**

11. The network of a construction project as shown in fig below with estimated durations of various activities. **[10]**



Determine the following

(i) Activity time, (ii) Total float & free float for each activity (iii) Critical Path for the network

SECTION C (Attempt any two Question)

12. a.) What is contract & contracting process? **[10]**
    b.) Explain different type of contract in detail. **[10]**

13. A construction Project consists of 12 activities. The predecessor relationships and duration mentioned below

Activity	A	B	C	D	E	F	G	H	I	J	K	L
Predecessors	-	A	A	A	C	C	B, E	F	F	D, I	G, H	K, J
Durations	3	5	4	6	3	4	5	5	3	4	2	3

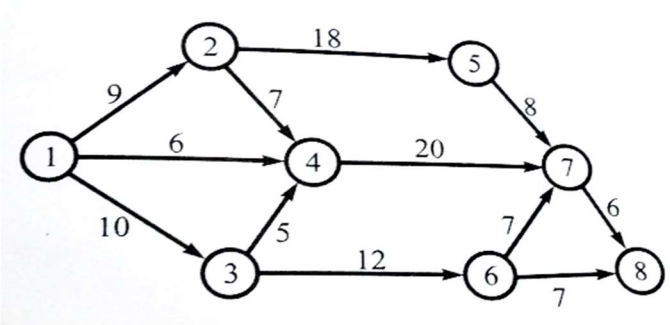
[20]

Draw a Network for the construction project and identify following

(i) Activity time, (ii) All floats for each activity (iii) Critical Path for the network

14. For the below mentioned network assume that, after working 15 days on the project, the following conditions exist: **[20]**

    a. Activities 1-2, 1-3, & 1-4 are completed as originally planned
    b. Activity 2-4 is in process & will be completed in 3 more days
    c. Activity 3-6 is in process and will need 18 more days for completion
    d. Activity 6-7 appears to present some problem & its new estimated time of completion is 12 days
    e. Activity 6-8 can be completed in 5 days instead of originally planned 7 days



i. Formulate a new project based on the assesment at the end of 15 days. Including all activites in the new project

ii. Draw bar chart for the original project and show on it the progress as on 15th day. Indicate also the modification based on the re-assessment.