Paper ID [CE301]

MAY 2006

B.Tech. (Sem. - 5th)

CONSTRUCTION MACHINERY AND WORK MANAGEMENT (CE - 301)

Time : 03 Hours   **Maximum Marks : 60**

Instruction to Candidates:

1) Section - A is **Compulsory**.

2) Attempt any **Four** questions from Section - B.

3) Attempt any **Two** questions from Section - C.

Section - A

(10 × 2 = 20)

Q1)

a) Activity and Event.

b) Short comings of Bar charts.

c) Forward pass and backward pass in network analysis.

d) Independent float.

e) Direct and Indirect costs of a project.

f) Updating process.

g) Work breakdown structure.

h) CPM.

i) Concrete pumps.

j) Belt conveyor system.

Section - B

(4 × 5 = 20)

Q2) Differentiate between PERT network and CPM network. Illustrate your answer by drawing the two types of network for the project.

Q3) Explain with example Fulkerson's rule for numbering the events of a network.

Roll No. ....

Total No. of Questions : 09]　　　　　　　　　　　[Total No. of Pages : 03

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(Please fill this Paper ID in OMR Sheet)

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Section - B

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Q4) Draw the network, number the events for following activities from the table given below:

Activity	Immediate Predecessor	Activity	Immediate Predecessor
A	-	H	A,D
B	-	I	B
C	-	J	G
D	B	K	H,I,E
E	C	L	H,I,E
F	C	M	K
G	C	N	L,F,J

Q5) The network for a certain project is shown in fig. 1 determine the slack for each event.

Q6) List various Hoisting and transporting equipments used in civil engg. projects. Explain one of them in detail with neat sketches.
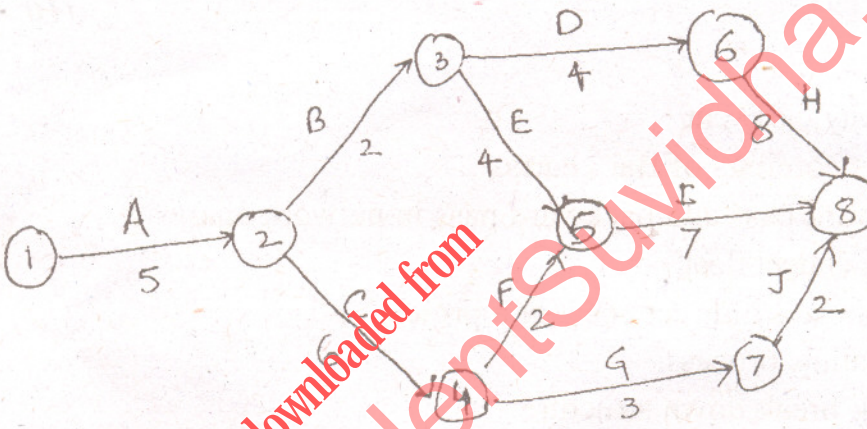

Fig. 1

Section - C

(2 × 10 = 20)

Q7) (a) Explain the working of hoes with neat sketches.

(b) How would you determine the economic life of equipment?

Q8) A maintenance project consists of number of jobs. Their normal duration and costs along with crash costs and duration are given below. Find out the optimum project cost and time.

Job	Normal Duration	Normal Cost (Rs.)	Crash Duration	Crash Cost (Rs.)
1-2	9	9000	6	15000
1-3	8	2000	5	9500
1-4	15	5000	10	20000
2-4	5	2000	3	4000
3-4	10	7000	6	13000
4-5	2	3000	1	7000

Indirect costs are Rs. 6000/- per day.

Q9) From the data given in the table for a CPM project draw the network and determine critical path based on total float.

Activity	Immediate Successor	Duration (Days)
A	C	3
B	D,E	5
C	F,G,H	4
D	F,G,H	8
E	I	9
F	J,K,L,M	5
G	K,L,M	8
H	I	6
I	P	5
J	N	4
K	O	7
L	Q	6
M	P	7
N	R	4
O	R	8
P	R	4
Q	R	5
R	None	3

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