BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: B.ARCH **SEMESTER : IX**
BRANCH: ARCHITECTURE **SESSION : MO/19**

SUBJECT: AR9103 CONSTRUCTION MANAGEMENT

TIME: 3:00 HOURS **FULL MARKS: 60**

INSTRUCTIONS:
1. The question paper contains 7 questions each of 12 marks and total 84 marks.
2. Candidates may attempt any 5 questions maximum of 60 marks.
3. The missing data, if any, may be assumed suitably.
***4*. Before attempting the question paper, be sure that you have got the correct question paper.**
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

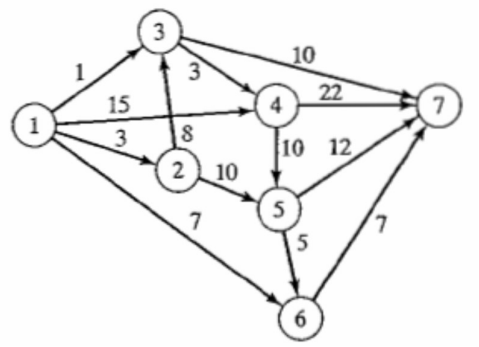
Q.1(a) Mention three broad objectives of project management. [2]
(b) Discuss the classification of projects based on the type of financing prevalent in India. [4]
(c) Elaborate the stages of project management with the help of flow chart. [6]

Q.2(a) Differentiate between slack and floats. [2]
(b) Briefly describe the event and activity classification. [4]
(c) Draw the Bar Chart and find the day wise manpower allocation. Modify the bar chart schedule with a resource levelling with three men. [6]

Activity	Duration (Days)	Relationship	Manpower Required
A	5	Starting Activity	2
B	3	Start after A	3
C	4	Starting Activity	3
D	2	Starting Activity	2
E	3	Start after D	3
F	3	Start after C	2

Q.3(a) Differentiate between PERT and CPM. [2]
(b) Write the "Fulkerson's rule of node-numbering". [4]

(c) The project has the following activities and characteristics. Draw the CPM network, Critical path and the project duration. [6]



Q.4(a) Draw the PERT network for the following Project. [2]

Activity	Nodes	Three Time Estimate (Days)	Activity	Nodes	Three Time Estimate (Days)
A	1*2	2/6/10	E	2*4	2/3/04
B	1*3	4/8/12	F	3*5	3/6/09
C	2*3	2/4/06	G	4*6	6/10/14
D	3*4	Dummy activity	H	5*6	1/3/05

(b) For the above project find the Critical Path, Project duration and the standard deviation. [4]
(c) For the above project calculate the Z value of the Project completion in 22 Days and 18 Days. [6]

PTO

Q.5(a) Data regarding the activities in a project are given below: [2]

Activity	Immediate Successor	Duration (Days)
A	C, D	6
B	E, G	8
C	E, G	4
D	G	3
E	F	6
F	-----	2
G	------	10

Draw the project network.

(b) For the above project, determine the critical path and the project duration. [4]

(c) Calculate the floats of all non-critical activities. [6]

Q.6(a) Write the Acceptance rule of NPV & IRR methods. [2]

(b) Describe the direct cost and indirect cost with reference to cost-time optimization. [4]

(c) PERT calculations yield a project length of 60 weeks with a variance of 9 weeks. Estimate the number of weeks required to complete the project with a probability of 95%. The z value for 95% probability may be taken as 1.647. [6]

Q.7(a) What is meant by quality control and quality specification in project management? [2]

(b) What are the reasons for considering the safety management? [4]

(c) Discuss the various equipments used for concreting operation. [6]

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