Seat No:_____

GANPAT UNIVERSITY

B. TECH. SEM. VIII CIVIL ENGINEERING

REGULAR EXAMINATION – MAY/JUNE- 2012

C-802: CONSTRUCTION MANAGEMENT

TIME: 3 HOURS **TOTAL MARKS: 70**

Instructions: - (1) Answer of the two sections must be written in separate answer books.

(2) Figures to the right indicate full marks.

(3) Assume suitable data if required.

Section - I

Q.1	(A)	What is project management? State Importance of project management.	6
	(B)	Write short note on Work Break Down structure.	6

OR

Q.1	(A)	Enlist Participants involved in a construction project and state their roles in project.	6
	(B)	Write short note on Milestone Chart.	6
Q.2	(A)	Explain Fulkerson's rules for numbering the events.	6
	(B)	**Differentiate:** Activity Oriented Network and Event Oriented Network.	5

OR

Q.2	(A)	What is a Gantt bar chart? Explain, with the help of a suitable example, the method of preparing a bar chart.	6
	(B)	**Define following term:** (i) Slack, (ii) Activity, (iii) Dummy, (iv) Project life cycle, (v) Total Float	5

Q.3 Attempt the following:

(A) Following activities are observed in a project. Prepare network diagram and find out (1) Critical path (2) Critical activities (3) Project duration and (4) prepare schedule for network including activity times and floats. **8**

Activity	Sequence Code	Duration (in days)
P	1 - 2	7
Q	2 - 3	6
R	2 - 4	5
S	3 - 5	6
Dummy	3 - 4	0
T	4 - 6	9
U	5 - 7	4
V	6 - 7	2
W	7 - 8	3

(B) For a PERT network, earliest expected time of completion is 35 days and sum of variances along critical path is 8.21. Find out **4**

(i) Probability of completion of project in 37 days.

(ii) Time duration that will provide 95% probability of its completion in time.(z=1.65 for 95% probability)

% Probability	Z
72.57	+0.6
75.80	+0.7
78.81	+0.8

Section – II

Q.4 (A) Write Short note on Cash Flow Analysis and use of 'S' Curve. **6**

(B) Define material management and state its importance. **6**

OR

Q.4 (A) From the following data for a power shovel, find out hourly rental cost for hiring it out to others using straight line method of depreciation: **9**

Prime Cost.....= Rs. 12,00,000/-
Estimated useful life..... = 7 years
Salvage Value..... = 10% of Prime cost
Investment Cost..... = 15% of average value
Maintenance & Repair cost...= 30% of annual depreciation
Annual overhead..... = Rs. 10,500/-
No. of hours per day.....= 20 hours
Operating factor..... = 0.60
Daily operating cost..... = Rs. 2200/-

Assume suitable data if required.

(B) Enlist stages of material management. **3**

Q.5 (A) Write Short note on Appraisal of Project. 6

(B) Prepare job layout for a multistory building. 5

OR

Q.5 (A) Write short note on Resources Allocation. 6

(B) Compare standard equipments and special equipments. 5

Q.6 (A) Following Activities are observed in a project. The data regarding the requirements of Concrete mixers per day are given in table. 6
Carryout resources allocation for the project and arrange the network considering maximum 3 Concrete mixers available per day on site. Project duration can be updated if required number of concrete mixer is more than 3. Draw histogram for requirement of Concrete mixers for original and revised schedule.

Activity	Sequence Code	Duration (in days)	Required No. of Concrete mixers
A	1 - 2	4	1
B	1 - 3	5	2
C	2 - 4	3	1
D	2 - 5	5	1
E	3 - 5	3	2
G	4 - 6	6	1
H	5 - 6	5	2

(B) Following Table gives data for the duration and costs of each activity of the project. The indirect cost of the project is Rs. 70/- per day. Determine the optimum duration of the project and the corresponding minimum cost. 6

Activity	Sequence Code	Normal Duration(days)	Normal Cost (Rs.)	Crash Duration (days)	Crash Cost (Rs.)
P	1-2	2	1000	2	1000
Q	1-3	7	500	3	900
R	2-3	6	300	3	420
S	2-4	5	200	3	250
T	3-4	0	0	0	0
U	3-5	9	600	4	900
V	4-6	11	600	7	1000
W	5-6	6	700	3	910

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