Student Exam No._____

GANPAT UNIVERSITY

B. Tech. Semester: VIII Civil Engineering

Regular Examination April – June 2016

2CI802 Construction Management

Time: 3 Hours **Total Marks: 70**

Instruction: 1 Attempt all questions.
2 Make suitable assumptions wherever necessary.
3 Figures to the right indicate full marks.

Section - I

Que. – 1 (A) Write general management functions. 6

(B) Write short note on project life cycle. 6

OR

Que. – 1 (A) Explain work breakdown structure with suitable example. 6

(B) Explain classification of construction projects. 6

Que. – 2 (A) Write shortcoming of bar charts and remedial measures. 6

(B) Explain importance of planning in detail. 5

OR

Que. – 2 (A) Define material management and state its importance. 6

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

Que. – 3 (A) Explain network rules in detail. 6

(B) Prepare a bar chart for 2BHK residential building. Select the suitable steps of activity and duration as per construction procedure. Starts from today and Sunday is holiday. 6

Section – II

Que. – 4 (A) Following activities are observed in a project. Prepare network diagram and find out 8

(1) Critical path (2) Critical activities (3) Project duration and
(4) Prepare schedule for network including activity times and floats.

Activity	Sequence Code	Duration (in Days)
A	1-2	5
B	2-3	9
C	2-4	3
D	3-6	2
E	4-5	4
DUMMY	3-5	0
F	5-7	7
G	6-7	3
H	7-8	9

(B) Explain four time estimates in CPM. 4

OR

Que. – 4 (A) Following activities are observed in a project. Prepare network diagram and find out 8

(1) Critical path (2) Critical activities (3) Project duration and (4) Prepare schedule for network including activity times and floats.

Activity	Sequence Code	Duration (in days)
A	1 - 2	4
B	1 - 3	5
C	2 - 4	3
D	2 - 5	5
E	3 - 5	3
F	4 - 5	0
G	4 - 6	6
H	5 - 6	5

(B) Explain Head event, Tail event and Dummy in detail with figure. 4

Que. – 5 (A) Following Table gives data for the duration and costs of each activity of the project. The indirect cost of the project is ` **2500/-** per week. Determine the **optimum duration of the project and the corresponding minimum cost**. Draw time **scaled network and cost-duration curve** for the project. 8

Activity	Sequence Code	Normal Duration(weeks)	Normal Cost (Rs.)	Crash Duration (weeks)	Crash Cost (Rs.)
P	1-2	6	7000	3	14500
Q	1-3	8	4000	5	8500
R	2-3	4	6000	1	9000
S	2-4	5	8000	3	15000
T	3-4	5	5000	3	11000

(B) Explain Direct and Indirect cost in detail. 3

OR

Que. – 5 (A) Following Activities are observed in a project. The data regarding the requirements of masons per day are given in table. 8

Carryout **resources allocation** for the project and **arrange the network in such a manner that requirement of masons are almost uniform** throughout project **without delaying the project** assuming that **unlimited number of masons available**. Draw histogram for requirement of masons for original and revised schedule.

Activity	Sequence Code	Duration (in days)	Required No. of masons
P	1 - 2	3	5
Q	2 - 3	3	3
R	2 - 4	5	4
S	3 - 5	3	4
T	4 - 6	3	6
U	5 - 7	2	4
V	6 - 7	5	3
W	7 - 8	2	6

(B) Define Total float, Free float and Independent float. 3

Que. – 6 (A) Following Activities are observed in a project. Prepare network diagram and find out 8

(1) Critical path and its standard deviation (2) Probability of completion of project in 30 days (3) Time duration that will provide 90% probability of its completion in time (4) Prepare schedule for PERT.

Activity	Sequence Code	Duration (in days)		
		T_o	T_m	T_p
P	1 - 2	5	7	8
Q	2 - 3	5	6	6
R	2 - 4	3	5	7
S	3 - 5	6	6	9
Dummy	3 - 4	0	0	0
T	4 - 6	7	9	12
U	5 - 7	2	4	5
V	6 - 7	2	2	4
W	7 - 8	2	3	4

(B) What do you understand by frequency distribution? How do you determine: 4

(i) Mean (ii) Variance (iii) Standard deviation.

END OF PAPER