B.E. Civil VIII CBGS 24.5.16 (64)

Const MgA

Q.P. Code : 733801

(CBSGS)

(3 HOURS) [Total Marks: 80]

N.B: 1) Question No:1 is compulsory.

2) Attempt any three questions out of remaining five questions.

3) Figures to the right indicates full marks

Q 1. Write short notes on any four of the following 20

a. Work breakdown Structure
b. Types of construction Projects
c. Causes of accidents
d. Quality Assurance
e. Function of Material Management

Q 2.a Explain the 14 principles of management. 10

b Following table shows the activities, their interdependence and the duration. 10

Activity	A	B	C	D	E	F	G	H	K	L	M
Preceding activity	–	–	–	A	B	B	C	C	F	G	H,K, L
Duration (days)	3	3	3	18	4	15	8	11	7	5	7

a) Draw a A-O-A network
b) Work out all activity times and floats
c) Identify the critical path and the project duration

3.a Explain in brief the phases in the life cycle of a construction project. 10

b For a small project, prepare a resource histogram based on EST and LST schedule. Comment on the suitability of distribution on above methods. 10

Activity	A	B	C	D	E	F	G
Preceding activity	–	–	–	A	B	C	E
Duration (days)	4	5	3	4	5	3	7
Masons required	3	4	4	3	2	4	8

Smoothen the resources depending upon the peak demands.

4.a Find out the optimum cost and optimum duration for this project. The indirect cost of the project is Rs. 3000/week 12

Activity	Immediate predecessor	Normal duration (weeks)	Normal Cost (Rs)	Crash duration (weeks)	Crash cost (Rs)
A	-	3	3000	1	4500
B	A	2	5000	1	8000
C	B	4	2000	2	4000
D	B	3	7000	1	10,000
E	B	2	12,500	2	12,500
F	C	3	10,000	1	13,000
G	D, E	5	6500	3	9000
H	F	4	4300	2	8000

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b What are the time overruns and cost overruns of a project? What are the methods to avoid them? 8

5.a The activity details of a small network is shown in the table below: 10

Activity	1-2	1-3	1-4	2-5	3-6	4-5	4-6	4-7	5-7	6-7
Time required	6	7	4	Dummy activity	4	12	10	8	5	6

The following conditions exist at the end of 10 days:

i) Activity 1-2 ,1-3 and 1-4 have been completed as originally scheduled.

ii) Activity 4-5 is in progress and will require 6 more days for its completion.

iii) Activity 4-6 is in progress and still require 6 more days for its completion

iv) Activity 3-6 is in progress and will be completed in one day.

v) Other activities have not been commenced and their original predicted duration will hold good, except for activity 5-7 which will require only three days instead of 5 days originally planned.

Update the network and determine the critical path of the updated network. What is the total increase in the project duration?

b Write short notes on: 10

i) Statistical Quality Control

ii) Resource Levelling

iii) Cost Slope

6.a A small project is composed of seven activities as given below: 10

Activity		Estimated duration (weeks)		
i	j	t_0	t_m	t_p
1	2	2	3	5
1	3	4	9	14
1	4	2	8	12
2	5	1	1	1
3	5	2	5	14
4	6	2	8	10
5	6	3	9	15

i) Draw project network

ii) Find expected duration, standard deviation and variance of all activities.

iii) Calculate the variance of the project duration.

iv) What is the probability that the project will be completed 3 weeks earlier than the expected date?

b. Write short notes on **any four** of the following: **10**

i) Beta distribution curve

ii) ISO 14000

iii) OSHA

iv) Requirements for preparation of a site layout

v) Sources of funds for starting a project.
