BACHELOR OF TECHNOLOGY (C.B.C.S.) (2020 COURSE)
B.Tech.Sem - IV CIVIL :SUMMER- 2022
SUBJECT : ITC-II: PLANNING & MANAGEMENT OF CONSTRUCTION PROJECTS

Day : Friday
Date : 24-06-2022

S-24375-2022

Time : 10:00 AM-01:00 PM
Max. Marks : 60

N.B.

1) All questions are **COMPULSORY**.
2) Figures to the **RIGHT** indicate **FULL** marks.
3) Use of **non-programmable calculator** is allowed.
4) Draw neat and labeled diagrams **wherever** necessary.
5) Assume suitable data **wherever** necessary.

Q.1 Explain modern scientific management by Fayol. Explain objectives and various functions of project management. **(10)**

OR

Q.1 Enlist various organizational structures. Prepare a line and staff organization chart and give the function of everyone. **(10)**

Q.2 What is bar chart? Explain advantages and limitations of bar chart with suitable example. **(10)**

OR

Q.1 Major activates involved in the development of an item with a vender are as follows: **(10)**

Activity	A	B	C	D	E	F	G	H	I	J
Duration (Weeks)	2	1	2	1	5	8	4	2	1	4

Constraints are:

1. A is start activity
2. B can start on completion of A
3. C, E and H succeed B
4. C controls D
5. E control F, And H controls I
6. G can commence after F is over
7. J can start once D and I are over
8. G and I are last activities

Draw the project network find out critical path and total duration also calculate total float.

Q.3 Draw the PERT network and find out slack and standard deviation. Also find out critical path duration of the project. **(10)**

Activity	Preceding Activity	Optimistic time	Most likely time	Pessimistic time
A	-	4	7	16
B	-	1	5	15
C	A	6	12	30
D	A	2	5	8
E	C	5	11	17
F	D	3	6	15
G	B	3	9	27
H	E, F	1	4	7
I	G	4	19	28

OR

PTO

Q.3 Following table shows activities of construction project and their duration draw the network and find out critical path, EST, EFT, LST, LFT and all floats: **(10)**

Activity	1-2	1-3	1-4	2-5	2-6	3-7	4-8	5-9	6-9	7-8	8-9
Duration (Days)	2	2	0	2	2	4	5	6	3	4	6

Q.4 Explain in details (any 3) **(10)**

1. Resource Allocation
2. Resource Smoothening
3. Resource leveling
4. Cost slope

OR

Q.4 Time and cost of the activities of a small project is given below. The indirect cost per day is Rs. 160/-. Draw the network and carryout the crashing out network and find out optimal cost and optimal duration. **(10)**

Activity	Normal		Crash	
	Time	Cost (Rs.)	Time	Cost(Rs.)
1-2	3	360	2	400
2-3	6	1,440	4	1,620
2-4	9	2,160	5	2,380
2-5	7	1,120	5	1,600
3-5	8	400	4	800
4-5	5	1,600	3	1,770
5-6	8	480	7	760

Q.5 A local TV repairs shop uses 36,000 units of a parts each year (A maximum consumption of 100 units per working day). It costs Rs. 20 to place and receive an order. The shop orders in lots of 400 units. It cost Rs 4 to carry one unit per year of inventory. Calculate EOQ, ordering cost, carrying cost and total cost of inventory. **(10)**

OR

Q.5 Perform on ABC analysis for the following **(10)**

Item no	101	102	103	104	105	106	107	108	109	110
Cost	5	11	15	8	7	16	20	4	9	12
Demand	48000	2000	300	800	4800	1200	18000	300	5000	500

Q.6 Explain TQM and its various elements. What is the necessity of TQM in construction industry? **(10)**

OR

Q.6 **a)** Explain six sigma concept and its applications. **(05)**

b) What are the applications of quality manual? **(05)**

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