GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VIII(NEW) EXAMINATION – SUMMER 2019

Subject Code: 2181501   **Date: 15/05/2019**

Subject Name: Project Management

Time: 10:30 AM TO 01:00 PM   **Total Marks: 70**

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

			MARKS
Q.1	**(a)**	What is 'Project'?	**03**
	(b)	Explain in brief the important parameters of project.	**04**
	(c)	How will you decide whether a new project is feasible or not?	**07**
Q.2	**(a)**	What are the objectives of using network analysis?	**03**
	(b)	Write brief note on : Social cost benefit analysis of a project.	**04**
	(c)	Define : (i) SSI (ii) Tiny sector industry (iii) Ancillary industry (iv) Village industry.	**07**

OR

	(c)	What is industrially backward area? Write the advantages and disadvantages of starting an industry in backward area.	**07**
Q.3	**(a)**	How 'Milestone Chart' differs from 'Gantt Chart'?	**03**
	(b)	What care one should take for better drawing of network diagrams?	**04**
	(c)	A project consists of 8 activities A,B,C,D,E,F,G and H with their time of completions as follows :	**07**

Activities	A	B	C	D	E	F	G	H
Duration (weeks)	3	5	2	4	7	5	6	4

The precedence relationships are as follows :
- A and B can be performed in parallel.
- C and D cannot start until A is complete.
- E cannot start until half the work of activity C is complete.
- F can start only after activity D is complete.
- G succeeds C.
- H is the last activity which should succeed E
(i)   Draw the bar chart.
(ii)   What is the total time of completion of the project ?

OR

Q.3	**(a)**	What is difference between an 'Event' and an 'Activity'?	**03**
	(b)	What is dummy activity and why is it used ?	**04**
	(c)	Consider the data of a software project as shown in table given below. The activities are different modules of the software application, which is to be developed. Construct a network of this software project.	**07**

Activities	A	B	C	D	E	F	G	H	I	J
Immediate Predecessor	-	A	A	A	D	D	E	F,G	C,H	B

Q.4	**(a)**	What is CPM? State the application of it.	**03**
	(b)	Distinguish between Total Float and Free Float of an activity.	**04**
	(c)	Draw the network for the following project and compute the earliest and latest time for each event and also find critical path.	**07**

Activity	Immediate Predecessor	Time
1 – 2	-	7
1 – 3	-	6

2 – 4	1 – 2	8
3 – 4	1 – 3	4
4 – 5	2 - 4	3
4 – 6	2 - 4 & 3 - 4	9
5 - 7	4 - 5	8
6 - 7	4 - 6	6
7 - 8	6 – 7 & 5 - 7	5

OR

Q.4 **(a)** What is PERT? State the application of it.   **03**

(b) What is meant by project direct and project indirect costs ? Explain their importance.   **04**

(c) Consider the details of a project which has 10 activities as shown in following table: **07**

Activities	A	B	C	D	E	F	G	H	I	J
Immediate Predecessor(s)	-	-	-	-	B	E	C	A,F	E	D,G
Duration in months	6	10	11	9	5	8	12	8	7	4

(i)   Draw the network of the project.

(ii)   Perform CPM calculations and find the critical path and corresponding project completion time.

Q.5 **(a)** Discuss in brief the resources allocation problem.   **03**

(b) DIC is considered to be a single window service organization for small entrepreneurs. - Describe in detail   **04**

(c) From the information given below, draw the PERT network :   **07**

Activity	Optimistic	Most Likely	Pessimistic
10-20	5	9	17
10-30	4	8	16
20-40	3	7	20
30-40	3	7	15
40-50	3	10	21
20-50	3	7	12
30-50	2	5	9

Determine the critical path, its duration, earliest and latest allowable occurance time and slacks of all events. Also determine the probability of completing the project in (i) 30 days and (ii) 35 days.

Given for $Z = -1.066$, $Pr = 14.35$

OR

Q.5 **(a)** What is Updating of a network ?   **03**

(b) What are the components of cost of projects? Discuss them in detail.   **04**

(c) Based on the data given below, determine the optimum duration of the project and the corresponding minimum cost.   **07**

Activity	Normal		Crash	
	Duration (week)	Cost (Rs.)	Duration (week)	Cost (Rs.)
1 - 2	6	8000	3	15500
1 - 3	8	5000	5	9500
2 - 3	4	7000	1	10000
2 - 4	5	9000	3	16000
3 - 4	5	6000	3	12000

The indirect cost of the project is Rs. 5000 per week. Draw the time-scaled version of network at each step of crashing.

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