

Answer Question No.1 & Any Four From the Rest

Q.1	<u>Answer Any Four</u>	8 X 4																																																															
a)	State the objectives of Project Management. Briefly explain the project life cycle.																																																																
b)	What are the different costs associated with project works? Discuss how the duration of a project can be reduced with minimum increase in the cost of the project.																																																																
c)	Discuss the characteristics of a project organization. Explain the different stages of Project Planning. What are the desirable qualities of a Project Manager?																																																																
d)	What is Investment Analysis? Explain its role in Project evaluation. What is meant by 'Net Present Value of a project? How it is utilized in evaluating project proposals?																																																																
e)	Briefly explain : i) Project constraints ii) Project environment & Project Stake holders.																																																																
f)	Make a comparative assessment of I) PERT & CPM and II) Decision making under Risk & Uncertainty.																																																																
g)	Identify the factors that make a project to be of high Risk. Explain how Project risks can be identified and minimized.																																																																
Q. 2	From the given data of a small manufacturing project : Determine: i) The Earliest & Latest time of all the events, ii) The project Duration, iii) Total Cost of the project, and ii) Total & Independent Float of all the non critical activities. Indirect cost is Rs. 1700 per Week.		17																																																														
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Determine the expected time of completion of the Project and Slack of all events. Find out the path with maximum variance and Determine the duration of the project for a probability of completion of 0.80. What is the probability of completing the project in 50 days?																																																																	

## Subject: PLANNING &amp; EVALUATION OF PROJECTS

Time : Three Hours

Full Marks: 100

Answer Question No.1 & Any Four From the Rest

Q. 4

- a) From the given data of a Project, evaluate the expected completion time and expected cost of the project considering the Risk involved.

Activity	Immediate Predecessor	Baseline Time Estimate(Days)	Risk likelihood	Baseline Cost Estimate(Rs.)	Corrective Time (Days)	Corrective Cost (Rs.)
A	--	10	0.2	12000	2	4400
B	--	7	0.3	4000	1	700
C	A	11	0.4	3000	3	500
D	A,B	9	0.2	6000	1	1000
E	A,B	7	0.2	2500	1	1000
F	C	15	0.3	12000	3	4000
G	D,F	8	0.1	7000	1	2000
H	G,E	12	0.3	4000	4	1500
I	E	11	0.1	10000	3	3000

- b) From the given Pay-off matrix showing profit of an organisation find the best decision alternative using i) Savage Principle, ii) Maximax Principle.

Decision Alternativ	Chance Event			
	Event 1	Event 2	Event 3	Event 4
D1	500	200	300	400
D2	600	350	300	350
D3	550	300	200	250
D4	400	250	400	500

Activities and the labour requirement of a Project is given in the following table:

Q.5.

Activity	Immediate Predecessor	Duration (Days)	No. of Workers
A	--	5	14
B	--	4	12
C	A,B	14	8
D	A,B	10	7
E	A	6	12
F	C	5	13
G	D,F	8	7
H	D,F	9	10
I	E,G,H	2	6
J	I	6	14
K	J	8	11

Evaluate the day wise labour requirement for the Project and draw the Histogram for Manpower loading based on earliest start of the activities. Carryout smoothing exercise to bring down the peak Manpower requirement & determine the total idle man days if the peak labour requirement is hired for the total duration of the project.

Q.6

From the given data of a small manufacturing project : Draw the Cost Vs Duration graph. Evaluate: i) the minimum Duration & Cost of the project, and ii) The project duration with minimum cost.

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Q.6

Activity	Immediate Predecessor	Normal Duration (Day)	Crash Duration (Day)	Direct Cost (Rs) Normal	Direct Cost (Rs.) Crash
A	--	4	2	4500	6300
B	--	3	2	1500	2200
C	A	12	10	8500	10500
D	A,B	8	6	4500	5000
E	A,B	4	3	4000	4950
F	E	3	1	2500	4100
G	D,F	6	5	5000	5900
H	D,F	7	6	2000	2200
I	C,G,H	2	2	4300	4300
J	I	4	2	5050	7500

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Q.7

The following activities have to be performed to complete a project. Precedence relationship, activity durations and monthly fund requirement are given in the following table:

Activity	Immediate Predecessor	Duration (Month)	Monthly Fund Requirement (Rs.)
A	--	9	30,000
B	--	15	20,000
C	A	6	50,000
D	A	12	10,000
E	B,C	10	15,000

Funds of Rs.4,40,000/, Rs. 4,45,000/ and Rs.2,55,000/ are to be released in years first, second and third respectively. Any unspent amount from a year is to lapse at the end of the year as per the stipulation of the funding agency.

i) Find the fund requirement as per early start schedule, and ii) Make a schedule satisfying the fund constraint.

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AREA UNDER THE STANDARD NORMAL CURVE  
WITH RESPECT TO LEFT EXTREME LIMIT

Z	0	-0.1	-0.2	-0.3	-0.4	-0.5	-0.6	-0.7	-0.8	-0.9	-1.0
A	0.5	0.460	0.421	0.382	0.345	0.309	0.274	0.242	0.212	0.184	0.159
Z	-1.1	-1.2	-1.3	-1.4	-1.5	-1.6	-1.7	-1.8	-1.9	-2.0	
A	0.136	0.115	0.097	0.081	0.067	0.055	0.045	0.036	0.029	0.023	
Z	-2.1	-2.2	-2.3	-2.4	-2.5	-2.6	-2.7	-2.8	-2.9	-3.0	
A	0.018	0.014	0.011	0.008	0.006	0.005	0.004	0.003	0.002	0.001	
Z	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	
A	0.540	0.579	0.618	0.655	0.692	0.726	0.758	0.788	0.816	0.841	
Z	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	
A	0.864	0.885	0.903	0.919	0.933	0.945	0.955	0.964	0.971	0.977	
Z	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	
A	0.982	0.986	0.989	0.992	0.994	0.995	0.996	0.997	0.998	0.999	