MMS - IV

University Examination

Time: 3 hrs   Marks: 60

Note: Q 1 is compulsory and carries 20 marks. Attempt any 4 questions from remaining 6 questions each carrying 10 marks. Use of scientific calculator is permitted. All necessary values are provided in the question paper.

Normal Table positive Z Value	0	0.82	1	1.04	1.28	1.5	1.65	1.96
Area from Z =0 till positive Z	0	0.30	0.34	0.35	0.40	0.43	0.45	0.475
Discounting factor for 10% year	0	1	2	3	4	5
	1	0.909	0.826	0.751	0.683	0.621

Q 1 (a) Consider a project with following details . Use Crashing or project compression technique to reduce project duration by 3.   10

act	prec	NT	NC	CT	CC
A	-	4	33	3	34
B	-	6	37	5	44
C	A	5	13	4	17
D	A,B	12	61	12	61
E	C	11	35	8	53
F	D,E	6	37	5	39
G	D	8	37	8	37
H	E	9	58	8	64
I	F,G	6	13	4	31
J	F,H	12	25	10	45
K	I,J	10	23	8	43

 (b) A company will launch new product with life of 3 years. All units produced are sold in same year. Sales quantity for year 1 is 10000 units which will increase by 1000/year. Selling Price for year 1 is 200 and it will increase by 7/year. Operating cost/unit for year 1 is 23 which will increase by 2/unit each year. Project is financed by Equity 12 lakh and Term Loan 12 lakh which carries interest at rate   8% per year and loan is to be repaid in 3 years by Equal Annual Installment. Interest for the year will be charged on Opening balance of loan of that year.   The Project assets are Land 2 lakh and depreciable   FA 22 lakh. Depreciation is charged at 20% per year by Written Down Value (WDV) method. Income tax is 35 %. Calculate Debt Service Coverage Ratio (DSCR) and Interest Coverage Ratio (ICR) for all 3 years.   10

 Q 2 Answer any 2 from below:

A new product is to be released in the market. Activities involved in a product launch and their interdependence and probabilistic time estimates are given below.

Activity	Predecessor	Optimistic time(weeks)	Most Likely time(weeks)	Pessimistic time(weeks)
A	-	1	1	7
B	A	3	6	9
C	A	3	6	9
D	C	2	2	2
E	B, C	4	7	10
F	B, C	2	5	8
G	D, E	3	5	13
H	D, E	4	4	4
I	F, G	4	6	8

55974   **Page 1 of 3**

A What are the chances that product will be launched before the end of 29.8 weeks?

B What should be the launch date if you want to be 90% sure?

C What are the chances that product will be launched with delay of 5.27 weeks?

Q 3. Answer any 2 from below:

The following are details of project when performance is measured at end of 15.

act	prec	NT	NC or BC	% act by 15	AC by 15
A	-	8	24	100	25
B	-	7	12	100	10
C	-	3	20	100	22
D	A	6	29	100	30
E	A	8	26	80	20
F	B,D	6	34	20	7
G	B,D	4	27	20	6
H	C	14	34	85	28
I	F,H	6	18	0	0
J	E,F,G	8	20	0	0

(a) Calculate Cost Performance Index (CPI).

(b) Calculate Schedule Performance Index (SPI)

(c) Find Revised Project Duration and Revised Project Cost.

Q 4. Answer any two of the below:

The past demand for 6 months is given of a product

Month	1	2	3	4	5	6
Demand	132	129	127	136	134	132

(a) Calculate Mean Squared Error and forcast for month 7 using Moving Average method with period 3.

(b) Calculate estimated sales for month 7 using exponential smoothing method with smoothing constant 0.1. Assume forecast for month2 as initial value of 132.

(c) Explain Mean Absolute Percentage Error as a measure of accuracy in forecasting.

Q 5. Answer any two of the below:

Details of a small project are given below.

act	prec	Duration
A	-	5
B	-	10
C	-	15
D	B	4
E	B	5
F	A,D	5
G	A,D	2
H	A,D	6
J	A,C,D,E	10
K	F	10
L	G,K	3

(a) Determine project duration.

(b) Determine critical path.

(c) Calculate total float for each activity.

55974   **Page 2 of 3**

Q 6. Answer any 2 from below:

(a) Explain different phases of Project Life Cycle.

(b) Explain how uncertainties are handled in PERT approach to project planning.

(c) Explain Matrix type of project Organization.

Q 7 . Answer any 2 from below each carrying 5 marks.

A project has initial investment of 20 . Expected net returns from this project for next 5 years are 2 , 6 , 8 , 12 and 15.

(a) Calculate Normal Payback period in months.

(b) Calculate discounted payback period at 10% in months of this project.

(c) Calculate NPV assuming rate of discounting is 10% per annum.

****