

Seat No. _____

Duration: 3 Hrs

B311NMAT

Marks:- 100

Note:- 1) All questions are compulsory

2) All questions carry equal marks

3) Figures to the right indicate maximum marks.

Q.1: ATTEMPT ANY 4

(4x5M = 20)

- Mr. Ashok, purchased 50 shares of a company having face value Rs. 100, market price at rs. 160, brokerage paid at the rate of 2 %. Find the amount invested by him.
- Mr. Raj has 80 shares of face value rs. 100 company declare dividend of 25%. Find total dividend.
- Miss. Komal invested rs. 10000 in mutual funds at nav Rs. 25.5 with entry load @ 2%. Find the number of units she will get.
- Mr. Ram, started sip investment for 4 months of rs. 10000 p.m. the NAV's for four months was rs. 21.35, 23.83, 25.78, 29.55. With entry load @ 2%. Find the average cost and arithmetic mean.
- If total sale value is 800000, total investment is 700000, total dividend Rs. 40000. Find the rate of return on investment.

Q.2: ATTEMPT ANY 4

(4x5M = 20)

- Find the values of (a) 6P_2 , (b) 5C_2 , (c) 8P_3 , (d) $0!$, (e) $5!$
- Find the 3 digits number from the following numbers given are 1,2,3,7,8,9. (i) if the repetition is not allowed and (ii) if repetition of numbers is allowed.
- From the group of 6 boys and 4 girls, a committee of 2 boys and 2 girls is to be formed. Find the number of such committee's.
- Minimize $Z = 12x + 20y$, sub to $x + y \geq 7$, $5x + 2y \geq 20$, $x \geq 0$, $y \geq 0$
- Maximize $Z = 15x + 10y$, subject to $8x + 5y \leq 60$, $4x + 5y \leq 40$, $x \& y \geq 0$.

Q.3: ATTEMPT ANY 4

(4x5M = 20)

- From the following data calculate the median.

C.i.	0-20	20-40	40-60	60-80	80-100
F	5	6	8	7	4

- If the x_1, x_2 and x_3 are 50, 80, 30, and n_1, n_2 and n_3 are 50, 70, 80. Find the combined mean.
- Find the range and coefficient of range of 5,12,20,24,26,30.
- Find the standard deviation of following data.

C.I.	0-10	10-20	20-30	30-40	40-50
F	2	3	6	5	4

- What are the merits and demerits of mean.

Q.4: ATTEMPT ANY 4

(4x5M = 20)

- What is Probability and steps to solve the question.
- If two dice are cast at a time. Find the probability of getting (i) sum of both is 9 (ii) both are equal numbers.
- if Three coins tossed at a time find the probability of getting (i) all heads (ii) no heads (iii) at least one head.
- find $e(x)$ and $v(x)$ of the following data.

X	1	2	3	4	5	6
P(x)	1/6	1/6	1/6	1/6	1/6	1/6

5. find $e(x)$ and $v(x)$ of the following data.

X	10	20	30	40
P(x)	0.4	0.3	0.2	0.1

Q.5: ATTEMPT ANY 4

(4x5M = 20)

1. What is the payoff table? Explain parts of it.
2. Find the best course of action using EMV.

Payoff table

STATE OF NATURE	COURSE OF ACTION (IN LACS)				PROBABILITY
	A1	A2	A3	A4	
S1	50	60	70	40	0.4
S2	60	75	75	60	0.3
S3	70	80	80	80	0.2
S4	85	65	40	90	0.1

3. Find the best course of action using EOL.

Payoff table

STATE OF NATURE	COURSE OF ACTION (IN LACS)				PROBABILITY
	A1	A2	A3	A4	
S1	48	55	34	64	0.4
S2	54	56	44	54	0.3
S3	60	58	49	44	0.2
S4	36	60	59	34	0.1

4. Find the best course of action using (i) maximax criteria and (ii) minimin criteria

STATE OF NATURE	COURSE OF ACTION			
	A1	A2	A3	A4
S1	140	120	135	100
S2	155	130	120	115
S3	160	140	145	150
S4	125	155	110	120

5. Find the best course of action using (i) maximin criteria and (ii) laplace criteria

STATE OF NATURE	COURSE OF ACTION			
	A1	A2	A3	A4
S1	79	68	72	65
S2	75	62	70	70
S3	83	66	75	75
S4	76	70	72	80

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