Note :- All questions are compulsory.

Figures to the right indicate full marks.

Q.1: ATTEMPT ANY 4   (4x5M = 20)

1. Mr. Tushar, purchase 80 shares of a company having face value Rs. 100, market price at Rs. 180, brokerage paid at the rate of 2 %. Find the amount invested by him.

2. Mr. Rajesh has 60 shares of face value Rs. 100 company declare dividend of 20%. Find total dividend.

3. Miss. Bhavika invested Rs. 20000 in mutual funds at NAV Rs. 28.5 with entry load @ 2%. Find the number of units she will get.

4. Mr. Ramesh, started SIP investment for 5 months of Rs. 5000 p.m. the NAV's for four months was Rs. 20.35, 23.83, 25.78, 29.55. With entry load @ 2%. Find the Average cost and Arithmetic mean.

5. If total sale value is 900000, total investment is 700000, total dividend Rs. 40000. Find the rate of return on investment.

Q.2: ATTEMPT ANY 4   (4x5M = 20)

1. Find the values of (a) $^5p_2$, (b) $^4c_2$, (c) $^9p_3$, (d) 0!, (e) 4!

2. Find the 3 digits number from the following numbers given are 1,2,4,6,8,9. (i) if the repetition is not allowed and (ii) if repetition of numbers is allowed.

3. 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 committees.

4. Minimize $Z = 15x + 20y$, sub to $x + y \geq 7$, $5x + 2y \geq 20$, $x \geq 0$, $y \geq 0$

5. Maximise $Z = 15x + 20y$, subject to $8x + 5y \leq 60$, $4x + 5y \leq 40$, x & $y \geq 0$.

Q.3: ATTEMPT ANY 4   (4x5M = 20)

1. From the following data calculate median.

C.i.	0-10	10-20	20-30	30-40	40-50
F	5	6	8	7	4

2. If the X1, X2 and X3 are 150, 180, 130, and n1, n2 and n3 are 50, 70, 80. Find the combined mean.

3. Find the range and co-efficient of range of 15,12,20,24,26,30,22.

4. Find the standard deviation of following data.

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

5. What are the merits and demerits of Median?

Q.4: ATTEMPT ANY 4   (4x5M = 20)

1. What is Probability and steps to solve question.

2. If two dices are cast at a time. Find the probability of getting (i) sum of both is 10 (ii) both are equal numbers.

3. If three coins tossed at a time find the probability of getting (i) all heads (ii) two heads (iii) atleast one head.

4. 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 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	30	50	35	40	0.4
S2	40	60	40	40	0.3
S3	60	20	50	30	0.2
S4	50	10	40	20	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	120	80	110	50	0.4
S2	110	100	80	60	0.3
S3	100	90	60	70	0.2
S4	90	50	40	100	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	40	20	35	10
S2	55	30	20	15
S3	60	40	45	50
S4	25	55	10	20

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	80	60	70	50
S2	70	80	70	60
S3	60	70	80	70
S4	90	90	90	80

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