

Duration: 2 ½ Hours

D311NQM.

Marks:- 75

Note:- 1) All questions are compulsory

2) All questions carry equal marks

3) Figures to the right indicate maximum marks.

F4BBI

(13)

Q1) (A) MULTIPLE CHOICE QUESTION (ANY 8)

8 M

1. Mode of 30, 50, 40, 30, 25, 20, 30, 45, 15, 28 is
a) 30 b) 25 c) 40 d) 50
2. The first quartile for 8, 40, 15, 34, 21, 30, 18, 24, 26, 20 and 31 is.....
a) 20 b) 19 c) 21 d) 18
3. The middlemost observation, dividing the entire distribution into two equal parts is known as
a) Range b) Mode c) 2nd quartile d) Mean
4. The value of the 25th percentile is same as the value of the
a) Median b) 6th Decile c) 1st Quartile d) Mode
5. If correlation between only two variable is considered as which correlation?
a) Positive b) Negative c) Multiple d) Simple
6. _____ formula is given by Karl Pearson.
a) k b) g c) r d) w
7. _____ means regression of y on x.
a) xyz b) lbw c) abc d) byx
8. if bxy is 0.4, byx is 0.4, r will be _____.
a) 0.4 b) 0.2 c) 0.16 d) 0.1
9. a coin has _____ probability.
a) 1 b) 2 c) 3 d) 0
10. _____ of policy holder is important factor for taking insurance.
a) age b) work c) cast d) height

Q1) (B) STATE WHETHER THE FOLLOWING STATEMENTS ARE TRUE OF FALSE. (ANY 7) 7M

1. Mean means maximum repetition.
2. There is only one type of average.
3. Quartiles divide the data in 4 parts.
4. Sum of all divide by number of data is formula for mean.
5. Karl Pearson has given decision theory formula.
6. Insurance policy holder has to pay bonus to company.
7. The term state of nature is used in decision theory.
8. Range means difference between largest value minus lowest value.
9. Probability means possibility.
10. Correlations limits is -1 to +1.

Q2) SOLVE THE FOLLOWING

8+7 = 15

A) IF $X_1 = 30, X_2 = 70, X_3 = 50, N_1 = 50, N_2 = 70, N_3 = 80$ THEN FIND COMBINE MEAN.

B) FIND THE MODE OF FOLLOWING DATA.

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

OR

8+7 = 15

Q2) SOLVE THE FOLLOWING

- C) Find the range and co-efficient of range of 5,12,20,24,26,30.
- D) 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

8+7 = 15

Q3) SOLVE THE FOLLOWING

- A) Find Karl Pearson's coefficient of correlation from the following data.

X	32	18	26	31	45
Y	17	34	16	22	21

- B) Find Rank correlation from the following data.

X	34	56	78	90	87	65	54	30
Y	55	66	88	99	22	10	25	60

OR

8+7 = 15

Q3) SOLVE THE FOLLOWING

- C) From the following data calculate regression equation of x on y and regression equation of y on x. Also find the value of x when y is 10 and find the value of y when x is 15.

X	5	6	8	7	4
Y	2	3	5	6	6

- D) $\bar{x} = 10$, $\bar{y} = 8$, $\sigma_x = 4$, $\sigma_y = 7$, $r = 0.4$, estimate the value of x when y is 20. Estimate the value of y when x is 25.

8+7 = 15

Q4) SOLVE THE FOLLOWING

- A) If three coins tossed at a time find the probability of getting (i) all heads (ii) 2 heads (iii) at least one head.
- B) Find the best course of action using EOL.

Payoff table

STATE OF NATURE	COURSE OF ACTION (IN LACS)				PROBABILITY
	A1	A2	A3	A4	
S1	480	550	340	640	0.4
S2	540	560	440	540	0.3
S3	600	580	490	440	0.2
S4	360	600	590	340	0.1

OR

8+7 = 15

Q4) SOLVE THE FOLLOWING

- C) Find the current age of Mr. Dev as on today's date, if his date of birth is on 17-08-1984.
- D) Find the annual premium of Mr. Shah for an insurance policy of Rs. 500000. If the insurance company charges Rs. 38 per thousand. Mr. Shah is a rider for which he has to pay Rs. 5 extra premium.

Q5) WRITE SHORT NOTES ON ANY 3

15 Marks

1. Merits of mean
2. Scattered diagram
3. Insurance and its types
4. Payoff table
5. Probability, sample space, event

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