

B.B.A. Semester - 3 (CBCS) Examination
Nov/Dec. -2021 [NEW COURSE]
Business Statistics (Allied)

Time: 2:30 Hours

Marks: 70

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

- Q1(a) What are correlation Explain types of correlation? 7
 (b) Explain Spearman Rank correlation Method with merits and limitations. 7

OR

- Q1(a) Find Correlation Coefficient by Karl Pearson's method for the following data.

X	0.1	0.2	0.3	0.4	0.5	0.6	0.7
Y	30,000	50,000	60,000	80,000	1,00,000	1,10,000,	1,30,000

- (b) Find correlation coefficient by Spearman Rank Method.

X	50	50	55	60	65	65	65	60	60	50
Y	11	13	14	16	16	15	15	14	13	13

- Q2(a) Give Difference Between correlation and regression. 7
 (b) Give properties of regression coefficient. 7

OR

- Q2 From the following data given below, find :

- (i) Two regression equations.
- (ii) The Coefficient of correlation between the marks in Economics and Statistics.
- (iii) The most likely marks in Statistics When marks in Economics are 30.

Marks in Economics	25	28	35	32	31	36	29	38	34	32
Marks in Statistics	43	46	49	41	36	32	31	30	33	39

- (b) Estimate Y when X = 70 and X when Y = 90 from the following Data.

Mean (x) = 18 Mean (Y) = 100

S.D.(X) = 14 S.D. (Y) = 20 r = 0.8

- Q3(a) Define the following 7
 (i) Mutually exclusive events.
 (ii) Independent events
 (iii) Exhaustive events.

- (b) If Events A and B are Independent then prove that their complement are also independent. 7

OR

- Q3(a) An example of Statistics is given to three Students A,B and C. Their probabilities of Solving the example correctly are respectively $\frac{1}{2}, \frac{3}{4}, \frac{1}{4}$. Find the probability that the example will be solved.

- Q3(b) IF $P(A) = 0.5$, $P(B) = 0.4$ and $P(A \cup B) = 0.7$, find the following probabilities.

- (i) $P(A/B')$
- (ii) $P(A' \cup B)$
- (iii) Are the events A and B Statistically independent?

- Q4(a) Define the following 7
- (i) Random variable
 - (ii) Mathematical Expectation
 - (iii) Variance of Random Variable.
- (b) Write properties of Normal distribution. 7

OR

- Q4(a) For a Random variable X , $E(X) = 2$, find the values of the following.
- (i) $E(3X)$ (II) $E(3x+5)$ (III) mean of X (iV) $E(4x-8)$
- Q4(b) An unbiased coin is tossed 10,000 times, find the probability of getting number of Heads
- (I) between 4900, and 5100
 - (II) more than 5100
 - (III) less than 5100

Use normal distribution as a limiting case of binomial distribution.

- Q5(a) Write properties and use of Binomial Distribution. 7
- (b) Write properties and uses of Poisson distribution. 7

OR

- Q5(a) A Binomial random variable Satisfies the relation $4P(x = 3) = P(x = 2)$ with $n = 5$ Find the probability of non zero values of the distribution.
- (b) Fit Poisson Distribution to the following data.

X	0	1	2	3	4
f	110	65	21	3	1
