

B.B.A. Semester - 3 (CBCS) Examination
Nov/Dec. -2021 (OLD COURSE)
BUSINESS STATISTICS (ELECTIVE 1)

Time: 2:30 Hours**Marks: 70****Instructions:**

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

Q.1(A) Find out coefficient of rank correlation

(07)

x	22		32	37	39	42	39	35	26	27	28
y	36		45	44	38	50	40	49	38	42	40

(B) What is correlation? Explain it by scatter diagram method.

(07)

OR

Q.1(A) Calculate Kaerl Pearsons's Coefficient of Correlation from the following data.

$$n=10, \sum x = 200, \sum y = 225, \sum (x - 10)^2 = 1100, \sum (y - 15)^2 = 1200,$$

$$\sum (x - 10)(y - 15) = 850.$$

(B) Calculate Kaerl Pearsons's Coefficient of Correlation between Height and weight from the following data:

Height	48	49	50	51	52	53	54	55	56
weight	98	100	88	102	95	125	120	110	125

Q.2(A) Explain the meaning of regression.

(07)

(B) Two equation of regression lines are $x+6y-31=0$ and $2x+3y-26=0$ Find two regression coefficients, two means and correlation coefficients. If S.D. of x is 5, find S.D. of y.

OR

Q.2 Obtain regression equations and estimate y when x= 100 and x when y=100 from the following data.

y→ x↓	80-100	60-80	40-60	20-40	0-20
50	2	4	6	2	3
52	3	2	1	3	4
54	5	4	3	3	5
56	3	2	5	4	6
58	-	-	1	6	3

Q.3(A) If A, B and C are mutually exclusive and exhaustive events and $3P(A)=4P(B)=2P(C)$, then find $P(A \cup B)$.

(07)

(B) Prove that $P(A \cup B) = P(A) + P(B) - P(A \cap B)$

(07)

OR

- Q.3(A) Three unbiased coin are tossed together. Find the probability of getting (i) 3 heads (ii) 2 heads and 1 tail (iii) 3 tails.
- (B) An urn A contains X white & Y black balls. Another urn B contains X white & Y black balls. A ball is transferred from the urn A to the urn B. Then a ball is drawn from urn B. Find the probability that it will be white.

- Q.4(A) Let x a random variable with the following probability distribution: (07)

X=x	-3	6	9
Prob (X=x)	$\frac{1}{6}$	$\frac{1}{2}$	$\frac{1}{3}$

Find $E(x)$, $E(x^2)$, $V(x)$ $E(2x+1)^2$

- (B) Prove that $V(x) = E(x^2) - [E(x)]^2$ (07)

OR

- Q.4(A) State importance of normal distribution.
- (B) In a normal distribution 8% values are more than 64 and 33% values are less than 45. Find parameters of the distribution.

- Q.5(A) For a Binomial distribution, mean= 4, variance=3, find n, p, q. (07)

- (B) Five unbiased coins are tossed 64 times. Find the expected frequencies of the distribution of possible number of Heads. (07)

OR

- Q.5(A) State the properties of Poisson Distribution.
- (B) x is a Poisson variate and $P(x=k) = P(x=k+1)$, find mean and S.D.
