

B.B.A. Semester - 3 (CBCS) Examination
Oct/Nov - 2024 [As Per Syllabus Year June-2019]
Business Statistics(Allied)

Time: 2:30 Hours

Marks: 70

Instructions:

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

Que-1 (A) What is correlation? Explain it by scatter diagram method. (07)

Que-1 (B) Find Rank Correlation Coefficient. (07)

x	15	20	25	12	40	60	20	80
y	40	30	50	30	20	10	30	60

OR

Que-1 (A) Write short note on Scatter Diagram method. (07)

Que-1 (B) From the following data, find Karl Pearson's coefficient correlation: (07)

x	15	14	13	12	11	10
y	10	20	30	30	50	80

Que-2 (A) Explain the meaning of regression coefficient. State its properties. (07)

Que-2 (B) From the following data, find two regression lines and estimate the value of y when $x = 50$. (07)

$$\bar{x} = 6, \bar{y} = 8, r = 0.3, S_x = 2.5, S_y = 3.$$

OR

Que-2 Obtain regression equations and estimate y when $x = 100$ and x when $y = 100$ from the following data. (14)

x→	90-100	100-110	110-120	120-130
y↓				
50-55	4	7	6	2
55-60	6	10	7	4
60-65	6	12	10	7
65-70	3	8	6	3

Que-3 (A) Define the following terms: (07)

- (1) Mutually exclusive events (2) Independent events (3) Exhaustive events.

Que-3 (B) The chance of an accident in a factory in a year is 10 in 50 in Poona, 10 in 60 in Baroda, 10 in 120 in Mumbai. Find the probability that an accident may happen in (1) at least one of these cities. (2) all of these cities. (07)

OR

Que-3 (A) Prove that $P(A \cup B) = P(A) + P(B) - P(A \cap B)$. (07)

Que-3 (B) If A, B and C are mutually exclusive and exhaustive events and $2P(A) = 3P(B) = 4P(C)$, then find $P(B \cup C)$ and $P(A \cup B)$. (07)

Que-4 (A) Find mean and variance of the following p.d. (07)

X= x	6	5	4	3
P(x)	0.10	0.30	0.40	0.20

Que-4 (B) Prove that $V(x) = E(x^2) - [E(x)]^2$ (07)

OR

- Que-4 (A) State important characteristics and uses of normal distribution. (07)
- Que-4 (B) In a normal distribution 7% values are less than 35 and 11% values are greater than 63. Find parameters of the distribution. (07)
- Que-5 (A) State the properties of Binomial Distribution. (07)
- Que-5 (B) An unbiased coin is tossed 6 times. Find the probability of getting (07)
- (i) exact 4 Heads (ii) at least 4 Heads.

OR

- Que-5 (A) State the properties of Poisson distribution. (07)
- Que-5 (B) If mean of poisson distribution is 0.81. Find its S. D. Also find $P(0)$ and $P(2)$. (07)
- ($e^{-0.81} = 0.4449$)
