

[90]

SARDAR PATEL UNIVERSITY
B.B.A LLB (HONS) (IV SEMESTER) EXAMINATION
MONDAY, 3rd APRIL 2017
2.00 PM TO 4.00 PM
UL04CBBH01 – BUSINESS STATISTICS

Total Marks: 50

Q.1 (A) Define Correlation. Explain its types with appropriate examples. (6)

(B) The data on price and quantity purchased relating to a commodity for 5 months is given below: (7)

Month:	January	February	March	April	May
Prices (Rs):	10	10	11	12	12
Quantity (Kg):	5	6	4	3	3

Find the Pearsonian correlation coefficient between prices and quantity and comment on its sign and magnitude.

OR

Q.1 (A) Describe the Scatter Diagram method with interpretation. (6)

(B) For a certain joint stock company, the prices of preference share (X) and debentures (Y) are given below: (7)

X	73.2	85.8	78.9	75.8	77.2	81.2	83.8
Y	97.8	99.2	98.8	98.3	98.3	96.7	97.1

Use the method of rank correlation to determine the relationship between preference prices and debenture prices.

Q.2 (A) Define regression. Describe regression coefficient in brief. (5)

(B) For some bivariate data, the following results were obtained. (7)

Mean value of variable X = 53.2

Mean value of variable Y = 27.9

Regression coefficient of Y on X = -1.5

Regression coefficient of X on Y = -0.2

What is the most likely value of Y, when X = 60?

What is the coefficient of correlation between X and Y?

OR

Q.2 (A) Write a note on properties of regression coefficient. (5)

(B) The following table gives the ages and blood pressure of 9 women. (7)

Age (X):	56	42	36	47	49	42	60	72	63
Blood pressure (Y):	147	125	118	128	145	140	155	160	149

Find the correlation coefficient between X and Y.

(i) Determine the least square regression equation of Y on X.

(ii) Estimate the blood pressure of a woman whose age is 45 years.

Q.3 (A) Define Time Series. Explain its uses with the context of practical aspect. (6)

(B) (7)

Year	Production (million lbs)	Year	Production (million lbs)
1987	464	1992	540
1988	515	1993	557
1989	518	1994	571
1990	467	1995	586
1991	502	1996	612

Assume a four-yearly cycle and calculate the trend by the method of moving average from the following data relating to the production of tea in India.

OR

Q.3 (A) Give a brief note on components of time series with appropriate examples. (6)

(B) Below are given the figures of production (in thousand quintals) of a sugar factory: (7)

Year	1992	1993	1994	1995	1996	1997	1998
Production	80	90	92	83	94	99	92

(a) Fit a straight line trend to these figures.

(b) Plot these figures on a graph and show the trend line.

(c) Estimate the production in 2001.

Q.4 (A) With the help of an example explain the meaning of the following: **(8)**

(i) Mutually exclusive events

(ii) Sample space

(iii) Dependent events

(iv) Exhaustive events

(B) A problem in mathematics is given to five students A,B,C,D and E. **(4)**
Their chances of solving it are $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{3}$, $\frac{1}{4}$ and $\frac{1}{5}$ respectively.
Find the probability that the problem will

(a) not be solved

(b) be solved

OR

Q.4 (A) Define probability. Give a detailed note on addition and multiplication **(8)**
theorems for different types of events.

(B) A consulting firm is bidding for two jobs, one with each of two large **(4)**
multinational corporations. The company executives estimate that
the probability of obtaining the consulting job with firm A, event A, is
0.45. The executives also feel that if the company should get the job
with firm A, then there is a 0.90 probability that firm B will also give
the company the consulting job. What are the company's chances of
getting both jobs?

BEST OF LUCK

