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(6th Semester)

COMMERCE

Paper No. : BC-603

(Business Statistics)

Full Marks : 70   *Pass Marks* : 45%

Time : 3 hours

(PART : B—DESCRIPTIVE)

(*Marks* : 45)

*The figures in the margin indicate full marks
for the questions*

1. *(a)* State and explain briefly the various types of diagrams used in the presentation of data.   9

Or

(b) State and explain briefly the various types of tables used in statistics.

2. *(a)* Find the interquartile range and the coefficient of quartile deviation from the following data :   9

Marks in Statistics	No. of Students
above 0	150
above 10	140
above 20	100
above 30	80
above 40	80
above 50	70
above 60	30
above 70	14
above 80	0

Or

(b) From the following data, obtain the two regression equations :

X	6	2	10	4	8
Y	9	11	5	8	7

3. (a) State and explain the various types of index numbers. Discuss the uses of index numbers. 5+4=9

Or

(b) Construct index numbers of price from the following data by applying—

(i) Laspeyres method;

(ii) Paasche method;

(iii) Bowley's method;

(iv) Fisher's Ideal method;

(v) Marshall-Edgeworth method. 1+2+2+2+2=9

Commodity	2002 Price	2002 Quantity	2003 Price	2003 Quantity
A	2	8	4	6
B	5	10	6	5
C	4	14	5	10
D	2	19	2	13

4. (a) Discuss the different methods of measuring seasonal variations in a time series. 9

Or

(b) The data below given the average quarterly prices of a commodity of four years. Calculate seasonal indices for the following time series data using the method of link relative :

Quarter	:	1991	1992	1993	1994
Quarter I	:	25	30	26	24
Quarter II	:	21	23	24	27
Quarter III	:	17	17	23	24
Quarter IV	:	28	32	30	31

5. (a) Explain the different definitions of probability and state their limitations, if any.   6+3=9

Or

(b) The probability that A can solve a problem is 0·7 and the probability that B can solve that problem is 0·6. Considering that these two events are independent, find the probability that the problem gets solved by either of them.   9

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(6th Semester)

COMMERCE

Paper No. : BC–603

(**Business Statistics**)

(PART : A—OBJECTIVE)

(*Marks* : 25)

The figures in the margin indicate full marks for the questions

Answer **all** questions

1. Indicate whether the following statements are *True* or *False* by putting a Tick (✓) mark in the brackets provided : 1×5=5

   (a) All facts numerically expressed are statistics.

            True   (   )   *False*   (   )

   (b) A sample is less expensive than a census.

            True   (   )   *False*   (   )

(c) Mean deviation is least when deviations are taken from median.

<div align="center">True (   )   False (   )</div>

(d) Bowley's index is the geometric mean of Laspeyres and Paasche Index.

<div align="center">True (   )   False (   )</div>

(e) Secular trend refers to the long-term movement.

<div align="center">True (   )   False (   )</div>

2. Put a Tick (✓) mark against the correct answer in the brackets provided :   1×5=5

(a) Diagram and graphs are tools of

(i) collection of data   (   )

(ii) analysis   (   )

(iii) presentation   (   )

(iv) summarization   (   )

(b) The coefficient of correlation

    (i)   has no limits   (   )

    (ii) can be less than −1   (   )

    (iii) can be more than 1   (   )

    (iv) varies between ±1   (   )

(c) If with a rise of 10% in prices the wages are increased by 20%, the real wage increase is by

    (i)   10%   (   )

    (ii) more than 10%   (   )

    (iii) less than 10%   (   )

    (iv) 20%   (   )

(d) In the least square linear trend equation $y = a + bx$, if b is positive. It indicates

    (i)   declining trend   (   )

    (ii) rising trend   (   )

    (iii) no trend at all   (   )

    (iv) All of the above   (   )

(e) If two events A and B are independent, the conditional probability that they will both occur is given by

    (i) $P(A) + P(B)$ (   )

    (ii) $P(A) \times P(B)$ (   )

    (iii) $P(A) - P(B)$ (   )

    (iv) $P(A) \times P(B) + P(AB)$ (   )

3. Fill in the blanks :   1×5=5

(a) Standard   Deviation   is   a   measure

of ....

(b) Given mean 25, mode 24, the median would

be... .

(c) When we shift the trend origin, the value

of b is ....

(d) Marshall-Edgeworth index number satisfies

.... test.

(e) If a card is drawn from a pack of cards, the
probability of getting either a king or queen

is ....

4. Answer/Write short notes on the following not exceeding *3* sentences each :   2×5=10

   (a) Pilot Survey of Pretest

(b) Distinguish between Primary data and Secondary data.

(c) Coefficient of correlation

(d) Index number

(e) Distinguish between Regression and Correlation.

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