2 0 2 4

(6th Semester)

COMMERCE

Paper : 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)* Define statistics. Explain the characteristics of statistics.   2+7=9

Or

(b) What do you mean by primary data? Discuss the various methods of collecting primary data.   2+7=9

2. *(a)* From the following data, calculate mean marks of the students : 9

Marks	No. of students
0–10	5
10–20	10
20–30	25
30–40	30
40–50	20
50–60	10

Or

(b) Calculate Karl Pearson's coefficient of correlation from the following data :

Price (in ₹)	:	4	5	7	10	4
Supply (in unit)	:	10	12	13	15	20

Also interpret the result.

3. *(a)* What is an index number? Explain the various types of index number.   2+7=9

Or

(b) Construct price index number by applying—

   (i) Laspeyres' method;

   (ii) Paasche's method;

   (iii) Fisher's method;

   (iv) Dorbish and Bowley method;

   (v) Marshall-Edgeworth method.   9

Commodity	2022		2023	
	Price	Quantity	Price	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 various components of time series.   9

Or

(b) From the following data, calculate the trend values by using the method of least square and estimate the sales from the year 2022 :

Year	:	2016	2017	2018	2019	2020
Sales (in '000)	:	70	100	120	130	150

5. *(a)* Define sample method. Explain the essentials of sampling.   2+7=9

(4)

Or

(b) A problem in statistics is given to three students *A*, *B* and *C*. Their chances of solving it are $\frac{1}{2}$, $\frac{1}{3}$ and $\frac{1}{4}$, respectively. What is the probability that the problem will be solved?   9

★ ★ ★

2 0 2 4

(6th Semester)

COMMERCE

Paper : BC–603

(Business Statistics)

(PART : A—OBJECTIVE)

(*Marks* : 25)

The figures in the margin indicate full marks for the questions

Answer **all** questions

1. Choose the correct answer and place its code in the brackets provided :   1×10=10

   (a) The process of arranging data in group of related facts of different classes is called

      (i) tabulation

      (ii) classification

      (iii) frequency

   [*(iv)* distribution   [   ]

(b) The cheapest method of collecting primary data is

   (i) telephone interview

   (ii) enumerator

   (iii) mailed questionnaire

   (iv) information from correspondents

   [   ]

(c) When the values of two variables move in the same direction, the correlation is said to be

   (i) positive

   (ii) negative

   (iii) No correlation

   (iv) None of the above

(d) Standard deviation is the measure of

   (i) mean

   (ii) median

   (iii) mode

   (iv) dispersion   [   ]

(e) Index numbers are expressed in

   (i) square

   (ii) area

   (iii) metre

   (iv) percentage   [   ]

(f) The index number which is used to measure the purchasing power of money is

   (i) price index

   (ii) quantity index

   (iii) cost of living index

   (iv) deflating   [   ]

(g) The most popular and widely used method for the measurement of trend line in time series is

   (i) graphic method

   (ii) semi-average method

   (iii) moving average method

   (iv) method of least square   [   ]

(4)

(h) The sample which is obtained from readily available list of the units of population is called

    (i) convenience sampling

    (ii) judgement sampling

    (iii) quota sampling

    (iv) multi-stage sampling   [   ]

(i) The occurrence of any of the events which prevents the occurrence of all the others is called

    (i) independent event

    (ii) dependent event

    (iii) mutually exclusive event

    (iv) not mutually exclusive event   [   ]

(j) The theory of probability was developed by

    (i) Blaise Pascal

    (ii) Thomas Bayes

    (iii) R. A. Fisher

    (iv) Karl Pearson   [   ]

(5)

2. State whether the following statements are *True (T)* or *False (F)* by putting a Tick (✓) mark :   1×5=5

(a) Median and mode are called positional averages.

                (T / F)

(b) Index numbers are specialized averages.

                (T / F)

(c) The sum of seasonal indices (using additive model) is equal to zero.

                (T / F)

(d) Attribute is a measurable characteristic.

                (T / F)

(e) Probability ranges from 0 to 2.

                (T / F)

3. Write short notes on any *five* of the following : 2×5=10

(a) Secondary data

(b) Properties of median

(c) Lorenz curve

(d) Splicing

(e) Business cycle

(f) Uses of index number

★ ★ ★

(g) Census method

★ ★ ★