Odd Semester, 2020

(Held in March, 2021)

COMMERCE

(Honours)

(BC–301)

(Business Statistics)

Marks : 75

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. (a) Define the term 'statistics' and discuss the importance of statistics in business. 2+8=10

   (b) Differentiate between descriptive and inferential statistics. 5

   Or

   (a) Differentiate between primary and secondary data and discuss any two methods of collecting primary data. 4+6=10

   (b) Briefly explain the significance of tabulation in statistics. 5

2. From the following data, calculate the value of mean, median and mode : 15

Age-group	0–10	10–20	20–30	30–40	40–50	50–60	60–70	70–80
No. of persons	5	20	35	45	75	70	45	25

Or

Calculate Karl Pearson's coefficient of skewness from the following data : 15

Profit (₹ in lakh)	0–20	20–40	40–60	60–80	80–100
No. of companies	8	12	30	14	6

3. (a) What is meant by simple, partial and multiple correlation? 6

   (b) From the following data, calculate rank correlation coefficient : 9

X	48	33	40	9	16	16	65	24	16	57
Y	13	13	24	6	15	4	20	9	6	19

   Or

   (a) "An index number is a special type of average." Discuss. 5

   (b) The following table shows the number of motor registrations in a certain territory for a period of 5 years and the corresponding sale of motor tyres by a firm in that territory :

Year	1	2	3	4	5
Motor registration	600	630	720	750	800
No. of tyres sold	1250	1100	1300	1350	1500

   Find the regression equation to estimate the sale of tyres when motor registration is known. Estimate sale of tyres when motor registration is 850. 10

4. *(a)* Four cards are drawn at random from a pack of 52 cards. Find the probability that—

(i) they are a king, a queen, a jack and an ace;

(ii) two are red and two are black;

(iii) there is one card of each suit.

3+3+3=9

(b) There are four hotels in a certain town. If 3 men check into hotels in a day, what is the probability that each checks into a different hotel? 6

Or

(a) Distinguish between a population and a sample. Discuss the relative merits of census and sample methods of collecting data. 3+3+3=9

(b) Enumerate the various methods of sampling. 6

5. *(a)* Fit a straight line trend by the method of least squares to the following data : 12

Year	:	1	2	3	4	5	6	7	8	9	10
Size of item	:	110	125	115	135	150	165	155	175	180	200

(b) Discuss briefly the importance of time series analysis in business. 3

Or

(a) Estimate the expectation of life at the age of 16 years by using the following data : 12

Age (in year)	:	10	15	20	25	30	35
Expectation of life (in year)	:	35·4	32·3	29·2	26·0	23·2	20·4

(b) Explain the interpolation methods used for interpolating the values of the independent variables that are not at equal intervals. 3

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