2024

(November–December)

COMMERCE

(Honours)

(Business Statistics)

(BC–301)

(Under Revised Syllabus)

Marks : 75

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. *(a)* Define Statistics and explain its characteristics in detail. 4+6=10

(b) State the limitations of statistics. 5

Or

(a) Distinguish between primary data and secondary data. 5

(b) Draw a histogram and frequency polygon from the following data : 5+5=10

Class Interval	*Frequency*
10–20	3
20–30	10
30–40	14
40–50	24
50–60	17
60–70	14
70–80	3

2. (a) From the data given below, find mean and median : 5+5=10

Marks	*No. of students*
1–5	7
6–10	10
11–15	16
16–20	30
21–25	24
26–30	17
31–35	10
36–40	5
41–45	1

(b) State the requisites of a good average. 5

Or

(a) Find the standard deviation from the following data : 9

Marks	*No. of persons*
20–25	170
25–30	110
30–35	80
35–40	45
40–45	40
45–50	35

(b) Calculate the co-efficient of variation of the two sections and find which section is more consistent : 6

Marks	*Section A*	*Section B*
	f	*f*
10–20	2	3
20–30	5	7
30–40	10	8
40–50	5	5
50–60	3	2

3. (a) Calculate Pearson's co-efficient of correlation from the following data : 10

x :	28	41	40	38	35	33	40	32	36	33
y :	23	34	33	30	26	28	31	34	36	38

(b) Find the most likely production corresponding to a rainfall 40″ from the following data : 5

	Rainfall	*Production*
Average	30″	500 kg
Standard deviation	5″	100 kg

Co-efficient of correlation = 0·8

Or

(a) State the uses of index numbers. 5

(b) Construct *(i)* Paasche's *(ii)* Laspeyre's and *(iii)* Fisher's index numbers for the following data : 10

	2017		*2018*	
Commodity	*Price*	*Qty*	*Price*	*Qty*
A	12	20	15	25
B	10	8	16	10
C	15	2	12	1
D	60	1	65	1
E	3	2	10	1

4. (a) Distinguish between mutually exclusive events and likely events. 5

(b) A bag contains 6 white balls and 8 red balls. Two drawings are made such that *(i)* the balls are replaced before the second trial and *(ii)* the balls are not replaced before the second trial.

(Continued)

Find the probability that the first drawing will give 3 white and the second 3 red balls in each case. 5+5=10

Or

(a) What is sampling? Briefly explain the various methods of sampling. 2+8=10

(b) Distinguish between complete enumeration and sampling. 5

5. (a) State the utility of time series analysis. 5

(b) Below are the figures of production of a sugar factory.

Year	*Production* (in '000 quintals)
2010	80
2011	90
2012	92
2013	83
2014	94
2015	99
2016	92

(i) Fit a straight line trend by the method of least squares.

(ii) Plot these figures in a graph and show the trend line. 6+4=10

Or

(a) State the assumptions of interpolation. 5

(Turn Over)

(b) The values of x and y are given below :

x	:	5	6	9	11
y	:	12	10	14	16

Find the value of y when $x = 10$ using Lagrange's method. 10

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