

3/H-76 (vii) (Syllabus-2019)

2023

(November)

COMMERCE

(Honours)

(BC-301)

(**Business Statistics**)

(Under Revised Syllabus)

Full Marks : 75

Time : 3 hours

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

1. (a) Define statistics. Highlight the important functions of statistics. 3+7=10
- (b) Distinguish between statistical data and statistical methods. 5

Or

(a) Distinguish between classification and tabulation of data.

5

(b) A survey of 370 students from the Commerce faculty and 130 students from the Science faculty revealed that 180 students were studying for only CA examinations, 140 for only Costing examinations and 80 for both CA and Costing examinations. The rest had opted for Part-time Management courses. Of those studying for Costing, only 13 were girls and 90 boys belonged to the Commerce faculty. Out of the 80 studying for both CA and Costing, 72 were from the Commerce faculty amongst whom 70 were boys. Amongst those co-opted for Part-time Management courses, 50 boys were from the Science faculty and 30 boys and 10 girls from the Commerce faculty. In all there were 110 boys in the Science faculty.

Present this information in a tabular form. Find the number of students from the Science faculty studying for Part-time Management courses.

10

2. (a) From the data given below, calculate mean, median and mode : 10

Overtime Hours	No. of Employees
10-15	11
15-20	20
20-25	35
25-30	20
30-35	8
35-40	6

- (b) Find the harmonic mean of the following distribution of data : 5

Dividend Yield (in %)	No. of Companies
2-6	10
6-10	12
10-14	18

Or

- (a) Compute quartile deviation and its coefficient from the following data : $8+2=10$

X	f
10-20	12
20-30	19
30-40	5
40-50	10
50-60	9
60-70	6

- (b) State the significance of measuring variation. 5

3. (a) Distinguish between correlation and regression analysis.

5

(b) From the data given below, find (i) the two regression lines and (ii) the coefficient of correlation :

10

X	Y
30	24
32	26
34	28
31	29
30	28
28	21
27	22
26	25
25	22
24	22

Or

(a) State the problems in the construction of index numbers.

5

- (b) Compute the cost of living index numbers using both the aggregate expenditure method and family budget method from the following data : 10

Commodity	Quantity (in units)	Price in 2010 (₹)	Price in 2020 (₹)
Wheat	100	8.00	12.00
Rice	25	6.00	7.50
Pulses	10	5.00	5.25
Ghee	20	48.00	52.00
Sugar	25	15.00	16.50
Oil	30	9.00	27.00

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

- (b) A bag contains 5 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.

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) Point out the difference between census survey and sample survey. 5
- (b) Enumerate the various methods of sampling and describe two of them mentioning the situations where each one is to be used. 3+7=10
5. (a) Briefly explain the various components of a time series. 7
- (b) From the data given below, calculate seasonal indices : 8

Quarter	Year →				
↓	2012	2013	2014	2015	2016
I	40	42	41	45	44
II	35	37	35	36	38
III	38	39	38	36	38
IV	40	38	40	41	42

Or

- (a) State the conditions under which the following interpolation methods are used : 5
- (i) Binomial method
- (ii) Newton's method

(b) Estimate the production of sugar for the year 1995 and 2005 from the following data : 10

<i>Year</i>	<i>Production (in tonnes)</i>
1980	100
1985	120
1990	150
1995	?
2000	210
2005	?
2010	320

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