



Bc/Bs-603

2023

(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. Mention the various functions of statistics. 2+7=9

Or

- (b) Highlight the importance and limitation of diagrammatic representation of statistical data. 4½+4½=9

2. (a) Calculate standard deviation from the following data :

9

Item	:	60	70	80	90	100	110	120
Frequency	:	3	6	9	13	38	5	4

Or

- (b) The ages of husbands and wives are given for 8 pairs. Calculate the coefficient of correlation between the two variables :

Age of Husbands	:	62	64	65	65	66	67	68	70
Age of Wives	:	65	66	63	66	70	70	67	69

3. (a) What is an index number? Analyze the use of index numbers.

2+7=9

Or

- (b) Calculate Fisher's ideal index from the following data and prove that it satisfies the time reversal test :

5+4=9

Commodity	1983		1984	
	Price ₹	Expenditure	Price ₹	Expenditure
A	8	80	10	120
B	10	120	12	96
C	5	40	5	50
D	4	56	3	60
E	20	100	25	150

4. (a) What is time series? What are the needs to analyze the time series? 2+7=9

Or

- (b) Fit a straight line trend for the following series. Estimate the value for 1987 : 9

Year	:	1980	1981	1982	1983	1984	1985	1986
Production of Steel (in tonnes)	:	60	72	75	65	80	85	95

5. (a) Discuss the difference between census and a sample enquiry. 9

Or

- (b) A can solve 90 percent of the problems given in a book and B can solve 70 percent. What is the probability that at least one will solve the problem selected at random?

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(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) Data collected on literacy from the census report is a/an

(i) primary data

(ii) secondary data

(iii) sample data

(iv) external source data

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(b) Statistics are

- (i) aggregate of facts
- (ii) numerically expressed
- (iii) collected for a pre-determined purpose

(iv) All of the above []

(c) Population characteristics are called

- (i) parameter
- (ii) statistic
- (iii) variable

(iv) attribute []

(d) Which one is restricted random sampling?

- (i) Stratified random sampling
- (ii) Systematic random sampling
- (iii) Cluster sampling

(iv) All of the above []

(e) Sum of squared deviation of a set of values is minimum when deviations are taken from the

(i) median

(ii) mode

(iii) mean

(iv) None of the above

[]

(f) The coefficient of correlation

(i) is a pure number

(ii) is a symmetrical function

(iii) varies between ± 1

(iv) All of the above

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(g) The sum of seasonal indices using additive model is equal to

(i) zero

(ii) 400

(iii) 600

(iv) 1200

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(h) Cyclical fluctuations are caused by

- (i) wars, earthquakes, floods, strikes, etc.
- (ii) festival, social customs, weather, etc.
- (iii) increase or decrease of population, industrial and agricultural production, etc.
- (iv) good and bad times of business and economic activities over a short period of time

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(i) Base-shifting method is strictly applicable only if the index number satisfies

- (i) factor reversal test
- (ii) time reversal test
- (iii) unit test
- (iv) circular test

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(j) In case of mutually exclusive events, $P(A \cup B)$ is

- (i) $P(A) + P(B)$
- (ii) $P(A) + P(B) - P(A \cap B)$
- (iii) $P(A)P(B / A)$
- (iv) $P(A)P(B)$

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

(a) Standard deviation can be less than mean deviation from mean.

(T / F)

(b) Laspeyres' index gives upward bias.

(T / F)

(c) Circular test is an extension of time reversal test.

(T / F)

(d) The titles of rows are named as captions.

(T / F)

(e) Cartograms are used to give quantitative information on a geographical basis.

(T / F)

3. Answer/Write short notes on any *five* of the following : $2 \times 5 = 10$

(a) Why is sample preferred over census?

(b) Properties of regression coefficient

- (c) State some important points to be considered in drafting a questionnaire.

- (d) What considerations are taken into account while selecting the base year for the preparation of an index number?

(e) Probability

(f) Multiplication law of probability

(g) Uses of time series

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