Bc/BS–603

2022

(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. Discuss the nature and importance of statistics. 2+7=9

Or

(b) Distinguish between primary and secondary data. Discuss the different methods of collecting primary data. 3+6=9

2. *(a)* Calculate mean and median from the following data : 9

Wages (₹ '000) :	0–10	10–20	20–30	30–40	40–50	50–60
No. of Workers :	12	17	23	39	16	03

Or

(b) Calculate Spearman's rank coefficient of correlation from the datas given below : 9

X :	53	98	95	81	75	61	59	55
Y :	47	25	32	37	30	40	39	45

3. *(a)* What is an index number? Discuss briefly the problems faced in construction of an index number. 2+7=9

Or

(b) Construct price index numbers from the following datas by applying—

(i) Laspeyres' method;

(ii) Paasche's method;

(iii) Fisher's ideal method;

(iv) Bowley and Dorbish method;

(v) Marshall-Edgeworth method : 9

Commodity	*1999*		*2000*	
	Price ₹	*Quantity*	*Price* ₹	*Quantity*
A	2	8	4	6
B	5	10	6	5
C	4	4	5	10
D	2	9	2	13

4. *(a)*

(b)

Year
Product
of Ste

5.

4. *(a)* What do you understand by time series analysis? Discuss in brief the components of time series analysis. 2+7=9

Or

(b) Fit a straight line trend for the following series. Estimate the value for 2015 : 9

Year	2008	2009	2010	2011	2012	2013	2014
Production of Steel :	60	72	75	65	80	85	95

5. *(a)* What is sampling? Point out the merits and demerits of sampling technique. 2+7=9

Or

(b) The probability that a contractor will get a plumbing contract is $\frac{2}{3}$ and the probability that he will not get an electrical contract is $\frac{5}{9}$. If the probability of getting at least one contract is $\frac{4}{5}$, what is the probability that he will get both the contracts? 9

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2022

(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 are generally obtained from

(i) primary sources

(ii) secondary sources

(iii) both primary and secondary sources

(iv) None of the above [ ]

(b) When population under investigation is infinite we should use

(i) the sample method

(ii) the census method

(iii) either the census method or the sample method

(iv) None of the above [ ]

(c) Classification is the process of arranging data in

(i) different columns

(ii) different rows

(iii) grouping of related facts in different classes

(iv) None of the above [ ]

(d) One of the methods of determining mode is

(i) Mode = 2 Median – 3 Mean

(ii) Mode = 2 Median + 3 Mean

(iii) Mode = 3 Median – 2 Mean

(iv) Mode = 3 Median + 2 Mean [ ]

(e) Coefficient of quartile deviation is calculated by the formula

(i) $\frac{Q_2 + Q_1}{4}$

(ii) $\frac{Q_3 + Q_1}{2}$

(iii) $\frac{Q_3 - Q_1}{Q_3 + Q_1}$

(iv) $\frac{Q_2 + Q_1}{Q_3 - Q_1}$ [ ]

(f) The measure of variation that is least affected by extreme observations is

(i) range

(ii) mean deviation

(iii) standard deviation

(iv) quartile deviation [ ]

(g) Time reversal test is satisfied when

(i) $P_{01} \times P_{10} = 0$

(ii) $P_{01} \times P_{10} = 1$

(iii) $P_{01} \times P_{10} > 1$

(iv) $P_{01} \times P_{10} < 1$ [

(h) When three or more variables are studied, it is a problem of

(i) either multiple or partial correlation

(ii) multiple correlation

(iii) partial correlation

(iv) simple correlation [

(i) Secular trend refers to the

(i) short-term movement

(ii) long-term movement

(iii) medium-term movement

(iv) None of the above [

(j) Much of the development in the theory of probability is associated with the name of

(i) Fisher

(ii) Karl Pearson

(iii) Bayes

(iv) None of the above [ ]

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

(a) Arithmetic mean is always the best measure of central tendency.

(T / F)

(b) Lorenz curve was used for the first time for measuring the distribution of profits.

(T / F)

(c) The rank correlation coefficient was developed by Spearman.

(T / F)

(d) Bowley's index is the geometric mean of Laspeyres and Paasches Index.

(T / F)

(e) The probability of throwing eight with a single dice is $\frac{1}{6}$.

(T / F)

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

(a) Census method

(b) Base shifting

(c) Secular trend

(d) Range

(e) Positive correlation

(f) Equally likely event

(g) Splicing

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