

1 SEM TDC STSH (CBCS) C1

2021

(March)

STATISTICS

(Core)

Paper : C-1

(Descriptive Statistics)

Full Marks : 50

Pass Marks : 20

Time : 2 hours

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

1. Choose the correct answer : 1×5=5

(a) The scale which does not possess any of the three attributes such as magnitude, equal intervals and absolute zero point is a/an

(i) ordinal scale

(ii) nominal scale

(iii) interval scale

(iv) ratio scale

(b) The algebraic sum of deviations of a set of n values from the arithmetic mean is

(i) a

(ii) 0

(iii) 1

(iv) None of the above

(c) The measure of kurtosis is

(i) $\beta_2 = 3$

(ii) $\beta_2 = 0$

(iii) $\beta_2 = 4$

(iv) None of the above

(d) When the correlation coefficient $r = \pm 1$, then the two regression lines are

(i) perpendicular to each other

(ii) coincide

(iii) parallel to each other

(iv) None of the above

- (e) Fisher's index number is the
- (i) arithmetic mean of Laspeyre's and Paasche's index
 - (ii) geometric mean of Laspeyre's and Paasche's index
 - (iii) harmonic mean of Laspeyre's and Paasche's index
 - (iv) None of the above

2. Answer the following questions in brief :

2×5=10

- (a) Explain the advantages of graphic representation of statistical data.
- (b) Which is the best measure of location? Give reasons.
- (c) Define raw moments and central moments.
- (d) How can we use scatter diagram to obtain an idea of the extent and nature of correlation coefficient? Explain.
- (e) State two different uses of index number.

3. (a) (i) What is statistical data and what are the points to be considered in classification of statistical data?

(ii) Define population and sample with reference to statistics. Give examples. $4+3=7$

Or

(b) Explain various types of measurement scale with suitable examples. 7

4. Answer any two of the following : $7 \times 2 = 14$

(a) Explain the main differences between mean deviation and standard deviation. Show that standard deviation is independent of change of origin and scale. $3+4=7$

(b) What is meant by central tendency? Define different measures of central tendency. $2+5=7$

(c) What is skewness and how is it measured? Distinguished clearly by giving figures, between positive and negative skewness. $4+3=7$

5. (a) What is coefficient of correlation? Prove that coefficient of correlation is independent of change of origin and scale. $2+5=7$

Or

- (b) Obtain the equation of the line of regression of Y on X. Explain why we have two regression lines and when these lines are identical. $4+2+1=7$

6. (a) Describe the different problems faced in constructing index numbers. 7

Or

- (b) Define the following index numbers :

(i) Laspeyre's index number

(ii) Paasche's index number

(iii) Fisher's index number

Why Fisher's index number formula is called an ideal index number? $6+1=7$
