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**1 SEM TDC STSH (CBCS) C 1**

**2019**

( December )

**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 of the following :  $1 \times 5 = 5$

(a) The classification of data according to location or areas is called

(i) qualitative classification

(ii) quantitative classification

(iii) geographical classification

(iv) chronological classification

(b) The sum of squares of deviations is minimum, when deviations are taken from

- (i) mean
- (ii) mode
- (iii) median
- (iv) zero

(c) In a mesokurtic curve

- (i)  $\beta_1 = 0$  and  $\beta_2 = 3$
- (ii)  $\beta_1 = 3$  and  $\beta_2 = 0$
- (iii)  $\beta_1 = 0$  and  $\beta_2 > 3$
- (iv)  $\beta_1 = 0$  and  $\beta_2 < 3$

(d) Regression co-efficient is independent of

- (i) units of measurement
- (ii) scale and origin
- (iii) Both (i) and (ii)
- (iv) scale and origin but not of units of measurements

(e) Index for base period is always taken as

- (i) 1
- (ii) 100
- (iii) 1000
- (iv) 0

2. Answer the following questions in brief :

2×5=10

- (a) What are the important functions of statistics?
- (b) Prove that  $HM \leq GM \leq AM$ .
- (c) What is co-efficient of variation? Is it free from the units of measurements? Justify.
- (d) Explain why we have two regression lines.
- (e) Index numbers are economic barometers. Explain.
3. (a) Distinguish between classification and tabulation of statistical data. Explain the general rules for graphical representation of statistical data. 3+4=7

Or

- (b) What are the different measurement scales used in statistics? Explain with suitable example.

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4. Answer any two questions of the following :

7×2=14

(a) Why is standard deviation regarded as superior to other measures of dispersion? Explain the important properties of standard deviation. 2+5=7

(b) Establish the relationship between central moments in terms of raw moments.

The first two moments of a distribution about the value 5 of the variable are 2 and 20 respectively. Find the mean and variance. 5+2=7

(c) Explain how the measures of skewness and kurtosis can be used in describing a frequency distribution. 7

5. (a) Define rank correlation. Deduce Spearman's formula for rank correlation co-efficient. 2+5=7

Or

(b) Show that in usual notations, the multiple correlation co-efficient,  $R_{1.23}$  is given by

$$R_{1.23}^2 = 1 - \frac{w}{w_{11}} \quad 7$$

6. (a) Discuss the importance and use of weights in the construction of index numbers.

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Or

- (b) Explain briefly, time reversal test and factor reversal test of index number. Indicate whether the following index numbers satisfy one or other of these text :

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Laspeyre's, Paasche's, Marshall-Edgeworth and Fisher ideal index numbers

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