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Sig. of Candidate. _____

Answer Sheet No. _____

Sig. of Invigilator. _____

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STATISTICS HSSC-I

SECTION – A (Marks 17)

Time allowed: 25 Minutes

NOTE:- Section-A is compulsory and comprises pages 1-2. All parts of this section are to be answered on the question paper itself. It should be completed in the first 25 minutes and handed over to the Centre Superintendent. Deleting/overwriting is not allowed. Do not use lead pencil.

Q. 1 Circle the correct option i.e. A / B / C / D. Each part carries one mark.

- (i) Students divided into different groups according to their intelligence and gender will generate _____
A. Qualitative data B. Quantitative data
C. Continuous data D. Constant
- (ii) In a statistical table row captions are called _____
A. Box head B. Stub
C. Body D. Title
- (iii) We must arrange the data before calculating _____
A. Mean B. Median
C. Mode D. Geometric mean
- (iv) The Geometric mean of a series of 4 items is 10.2. The product of all the items shall be _____
A. 10000 B. 10824.3216
C. 1061.20 D. 10004
- (v) The mean deviation of the scores 12, 15, 18 is _____
A. 6 B. 0
C. 3 D. 2
- (vi) Which of the following is negatively skewed?
A. Mean = Median = Mode
B. Mean > Median > Mode
C. Mean < Median < Mode
D. $Q_1 - \text{Median} > \text{Median} - Q_3$
- (vii) In fixed base method, the base period should be _____
A. Far away B. Abnormal
C. Normal D. Unreliable
- (viii) In Laspeyre's Price Index the quantities used as weight relate to _____
A. Current year B. Base year
C. Both A and B D. None of these

- (ix) If $y = 2 + 0.6x$ then the value of slope is _____
 A. 2 B. 0.6
 C. 1.2 D. Zero
- (x) Which of the following can never be taken as coefficient of correlation?
 A. 0 B. -0.99
 C. 0.05 D. $\sqrt{3}$
- (xi) When b_{yx} is positive, then b_{xy} will be _____
 A. Negative B. Positive
 C. Zero D. One
- (xii) The systematic components of time series which follow regular pattern of variations are called _____
 A. Noise B. Model
 C. Signal D. None of these
- (xiii) Which of the following is an example of irregular variation?
 A. Production of wheat from 1980–1997
 B. Sale of room-coolers during summer
 C. Births by hours of day
 D. Sudden causes of war
- (xiv) Standard deviation is independent of change of _____
 A. Origin B. Scale
 C. Origin and scale D. None of these
- (xv) What is the process of arranging data into rows and columns called?
 A. Classification B. Tabulation
 C. Ogive D. Array
- (xvi) A statistic which is not measurable is called _____
 A. Constant B. Attribute
 C. Variable D. Parameter
- (xvii) If the third moment about mean is zero then the distribution is _____
 A. Positively skewed B. Negatively skewed
 C. Symmetrical D. None of these

For Examiner's use only:

Total Marks:

17

Marks Obtained:

— 1H A-1013 (L) —



STATISTICS HSSC-I

Time allowed: 2:35 Hours

Total Marks Sections B and C: 68

NOTE:- Sections 'B' and 'C' comprise pages 1-2 and questions therein are to be answered on the separately provided answer book. Answer any fourteen parts from Section 'B' and attempt any two questions from Section 'C'. Use supplementary answer sheet i.e. Sheet-B if required. Write your answers neatly and legibly.

SECTION – B (Marks 42)

Q. 2 Attempt any FOURTEEN parts. All parts carry equal marks.

(14 x 3 = 42)

- (i) Write briefly about the importance of Statistics in different fields.
- (ii) Differentiate between Discrete and Continuous variable.
- (iii) Define Classification.
- (iv) What are the requisite of a good statistical table?
- (v) Write down the class boundaries, mid points and class width for each of the following classes:
 - a. 8 — 12, 13 — 17
 - b. 2.5 — 3.4, 3.5 — 4.4
 - c. -3 — +3, 4 — 10
- (vi) Define Mean, Median and Mode. Give two methods of calculating mean.
- (vii) The mean of 3 groups, each containing ten values, are 10, 20 and 30. Find mean for all thirty values.
- (viii) Write down the properties of Arithmetic mean.
- (ix) The Mean of 'n' value is 8. If a new value 28 is included the mean becomes 9. Find the value of 'n'.
- (x) Define Dispersion, Mean deviation and Standard deviation.
- (xi) Define Skewness, Positive Skewness and Negative Skewness.
- (xii) Find Bowley's coefficient of skewness given:
 $Q_1 = 53.67$, Median = 65, $Q_3 = 76.33$. Also comment upon the result.
- (xiii) Given $\Sigma x = 180$, $S^2 = 36$ and $n = 5$. Find Σx^2 .
- (xiv) Define Index number. Differentiate between Simple and Composite Index numbers.
- (xv) Given $\Sigma p_0 q_0 = 3600$, $\Sigma p_1 q_0 = 4300$, $\Sigma p_0 q_1 = 4100$, and $\Sigma p_1 q_1 = 4890$.
Find Fisher's Ideal Price Index number.
- (xvi) Define Correlation, Positive correlation and Negative correlation.
- (xvii) The equations of two regression lines obtained from ten observations are $10X = 5Y - 55$ and $100Y = 200X + 1180$. Find the correlation coefficient between X and Y.
- (xviii) Differentiate between Regression and Correlation; Perfect Positive and Perfect Negative correlation.
- (xix) What are the various methods of measuring Secular trend in a time series?

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SECTION – C (Marks 26)

Note:-

Attempt any TWO questions. All questions carry equal marks.

(2 x 13 = 26)

- Q. 3 a. Find Mean, Median and G.M from the following data:

Marks	10 – 25	25 – 40	40 – 55	55 – 70	70 – 85	85 – 100
f	6	20	44	26	3	1

- b. In a certain distribution the first four moments about $x = 5$ are 2, 20, 40 and 50. Show that mean is 7, variance is 16 and the 3rd mean moment is -64. Is the distribution positively or negatively skewed.

- Q. 4 Construct the following price index for the year 1981 from the data given below:

- (i) Laspeyre's Price Index
(ii) Paasche's Price Index
(ii) Fisher's Price Index

Commodity	Price		Quantity	
	1980	1981	1980	1981
A	10	12	20	22
B	8	8	16	18
C	5	6	10	11
D	4	5	7	8

Show Fisher's Index is G.M of Laspeyre's and Paasche's Index.

- Q. 5 a. Compute the coefficient of correlation between X and Y from the following data after calculating the missing values. The mean of X and Y series are 6 and 8, respectively.

X	4	6	?	2	8
Y	8	9	5	11	7

- b. Compute 4-Quarter centered moving averages from the following:

	Quarter			
	I	II	III	IV
1977	102	71	47	98
1978	125	106	73	231
1979	281	229	209	488