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55

Sig. of Invigilator. _____

Page 1 of 2 (Stat)

- (ix) If any value in a series is zero, then we can not calculate the_____
- A. Mean B. Geometric mean
C. Mode D. Median
- (x) The positive square root of the variance of a distribution is known as_____
- A. Standard deviation B. Mean deviation
C. Absolute deviation D. None of these
- (xi) If $\bar{x} = 5$, then which of the following expressions is minimum?
- A. $\sum (x - 25)^2$ B. $\sum (x - 5)^2$
C. $\sum |x - 5|$ D. $\sum |x - 25|$
- (xii) Standard deviation of 2,2,2,2 and 2 is equal to_____
- A. 2 B. 8
C. Zero D. 4
- (xiii) If the moment Ratio $\beta_2 = 3$ then the distribution is_____
- A. Platykurtic B. Positively skewed
C. Symmetrical D. Mesokurtic
- (xiv) The price used in the construction of consumer price index numbers is _____
- A. The retail price B. The wholesale price
C. The fix price D. None of these
- (xv) Base year weighted index numbers are also known as_____
- A. Laspeyre's B. Paasche's
C. Fisher's D. None of these
- (xvi) Long term variation is regarded as_____
- A. Secular trend B. Seasonal variation
C. Cyclical variation D. Irregular variation
- (xvii) The graph of a time series is called a_____
- A. Histogram B. Historigram
C. Trend line D. Scatter diagram

For Examiner's use only:

Total Marks:

17

Marks Obtained:

-----1HA 1313 -----



STATISTICS HSSC-I

36

Time allowed: 2:35 Hours

Total Marks Sections B and C: 68

NOTE:- Sections 'B and C' comprise pages 1-2. Answer any fourteen parts from Section 'B' and any two questions from Section 'C' on the separately provided answer book. 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) Give three examples of Discrete variable.
- (ii) Define Frequency distribution.
- (iii) Describe the empirical relation between Mean, Median and Mode.
- (iv) The mean of three groups each containing 15 values is 10, 20 and 30.
Find mean for all forty-five values.
- (v) Find two numbers whose arithmetic mean is 5.0 and geometric mean is 4.0.
- (vi) Define **Arithmetic mean**, **Geometric mean** and **Harmonic mean**.
- (vii) Define **Semi interquantile range**, **Mean deviation** and **Standard deviation**.
- (viii) A student calculated mean and standard deviation of 25 values as 20 and 4, respectively.
Find the value of coefficient of Variation.
- (ix) If x : - 5.2, 4.4, 3.1. Find its Variance.
- (x) Write three properties of Variance.
- (xi) If Paasche's index number is 105.72 and Laspeyre's index number is 107.22.
Find Fisher's index number.
- (xii) Distinguish between the Fixed base method and Chain base method used in the construction of index number.
- (xiii) Find the regression coefficient y on x and the regression coefficient x on y from the following data
 $n = 10, \sum D_x = -8, \sum D_y = 0, \sum D_x^2 = 66, \sum D_y^2 = 99$ and $\sum D_x D_y = 72$
- (xiv) Define the two regression coefficients.
- (xv) Find the correlation coefficient from the regression coefficients.
 - a. 1.2 and 0.6
 - b. -0.76 and -0.82
- (xvi) Given $n = 100, \sum x = 5000, \sum y = 6000, \sum xy = 300300, \sum x^2 = 250400$ and $\sum y^2 = 360900$.
Calculate the correlation coefficient 'r'
- (xvii) Define Correlation coefficient.
- (xviii) Define Irregular movements.
- (xix) Define **Time series** and **Historigram**.

SECTION – C (Marks 26)

Note: Attempt any TWO questions. All questions carry equal marks.

(2 x 13= 26)

Q. 3 a. Find Q_3 and Mode for the following data:

Marks	30-39	40-49	50-59	60-69	70-79	80-89	90-99
Frequency	2	3	11	20	32	25	7

b. Calculate Variance and Mean deviation (from mean) for the following frequency distribution:

Classes	70-74	75-79	80-84	85-89	90-94
Frequency	3	8	12	18	9

Q. 4 Calculate Laspeyres', Paasches' and Fisher Ideal price index number for the data given below, taking 1946 as base year:

Commodities	Price		Quantity	
	1946	1950	1946	1950
A	64	75	270	276
B	40	45	124	118
C	18	21	130	121
D	58	68	185	267

Q. 5 a. Fit two lines $y=a+bx$ and $x=c+dy$ by method of least square to the following data:

X	1	2	3	4	5
Y	8	9	13	18	27

b. Compute seven-day moving averages for the following record of attendance:

Week	Sun	Mon	Tues	Wed	Thur	Fri	Sat
I	24	55	22	48	52	55	61
II	27	52	32	43	53	56	65

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