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Answer Sheet No	
Sig. of Invigilator.	

STATISTICS HSSC-I

SECTION - A (Marks 17)

Time al	llowed: 25 Minutes
NOTE:	Section—A is compulsory and comprises pages 1-2. All parts of this section are to be answered on the

E:	ques	stion p		completed in the	orts of this section are to be answered on the first 25 minutes and handed over to the d. Do not use lead pencil.
	Circle	the co	rrect option i.e. A / B / C / D	. Each part carries o	one mark.
	(i)	A spe	ecific characteristic of a sampl	le is called:	
		A.	Variable	В.	Constant
		C.	Parameter	D.	Statistic
	(ii)	A vari	iable that assumes only some	e selected values in a	range is called:
		A.	Continuous variable	В.	Quantitative variable
		C.	Qualitative variable	D.	Discrete data
	(iii)	Color	s of flowers is an example of:		•
		A.	Quantitative variable	В.	Symmetric variable
		C.	Skewed variable	D.	Qualitative variable
	(iv)	The g	rouped data are called:		
		A.	Primary data	В.	Raw data
		C.	Secondary data	D.	Difficult to tell
	(v)	In cia	ssification, the data are arran	iged according to:	
		A.	Percentages	В.	Differences
		C.	Similarities	D.	Ratios
	(vi)	A sec	ctor diagram is also called:		
		A.	Bar diagram	В.	Histogram
		C.	Pie diagram	D.	Historigram
	(vii)	The r	measure of central tendency I	isted below is:	
		A.	The raw score	В.	The Mean
		C.	The range	D.	Standard deviation
	(viii)	Mode	e of the series 0, 0,0,2,2, 3,3,8	8,10 is:	
		A.	2	В.	0
		C.	3	D.	No Mode

DO NOT WRITE ANYTHING HERE

(ix)	The population mean μ is called:								
	A.	Discrete variable	В.	Parameter					
	C.	Continuous variable	D.	Sampling unit					
(x)	in Syn	nmetrical distribution $Q_3 - Q_1 = 20$, Mea	lian = 1	$5, Q_3$ is equal to:					
	A.	5	В.	25					
	C.	20	D.	15					
(xi)	The st	andard deviation of – 5, – 5, – 5, – 5 is:							
	A.	0	В.	+5					
	C.	5	D.	- 25					
(xii)	The m	easures of dispersion can never be:							
	A.	Negative	В.	Zero					
	C.	Positive	D.	Equal to 2					
(xiii)	When	index number is calculated for Several v	ariables	it is called:					
	A.	Composite index	В.	Wholesale price index					
	C.	Volume index	D.	Simple index					
(xiv)	Paasc	he's price index number is also called:							
	A.	Base year weighted	В.	Current year weighted					
	C.	Simple aggregative index	D.	Consumer price index					
(xv)	Index	number having upward bias is:							
	A.	Laspeyre's index	В.	Paasche's index					
	C.	Fisher's index	D.	Marshall Edgeworth index					
(xvi)	If regr	ression line of $\hat{y} = 5$ then value of regres	sion coe	efficient of y and x is:					
	A.	0.5	В.	0					
	C.	1	D.	5					
(xvii)	A busi	ness cycle has:							
	A.	One stage	В.	Four stages					
	C.	Three stages	D.	Two stages					
For Ex	aminer	's use only:							
		•	Total	Marks: 17					
			Marks	s Obtained:					
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STATISTICS HSSC-I

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.

 $(14 \times 3 = 42)$

- (i) Differentiate between variable and constant.
- (ii) Name the sources of primary data.
- (iii) Distinguish between Histogram and Historigram.
- (iv) Write down the qualities of a good average.

(v)
$$u = \frac{x - 170}{5}$$
, $\sum fu = 100$ and $\sum f = 200$. Find arithmetic mean.

- (vi) Define Geometric mean.
- (vii) Find unbiased sample standard deviation of the scores 30, 35, 40.
- (viii) $\sum x = 180$, $\sum x^2 = 6660$ and n = 5. Find coefficient of variation.
- (ix) The first four moments about the arithmetic mean of a distribution are 0,4, 6 and 48. Find β_2 .
- (x) Define the term Skewness.
- (xi) $\sum P_n q_n = 1000$ and $\sum P_n q_n = 1360$. Find current year weighted index.
- (xii) What is cost of living index number?
- (xiii) x=1, y=8 and b=2. Find the value of intercept a.
- (xiv) If $b_{vx} = -1.6$ and $b_{xy} = -0.4$. Find the value of r_{xy} .
- (xv) What is meant by residual?
- (xvi) $\sum x = 0$, $\sum y = 27.1$, $\sum xy = 29.5$, $\sum x^2 = 330$. Determine the value of b.
- (xvii) If y = 16, 18, 20, 22, 24, x = -2, -1, 0, 1, 2 and $\hat{y} = 20 + 2x$. Compute the sum of squares of residuals.
- (xviii) What is meant by seasonal variations?
- (xix) Define irregular variations.

Page 1 of 2 (Stat)

SECTION - C (Marks 26)

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

 $(2 \times 13 = 26)$

(06)

Q. 3 a. The following frequency distribution shows the hourly income of 100 households in a locality:

Income (Rs)	35 – 39	40 – 44	45 – 49	50 – 54	55 – 59	60 – 64	65 – 69
Frequency	13	15	28	17	12	10	5

Calculate the arithmetic mean and show that sum of deviations of values from their mean is zero.

b. Compute the Bowley's coefficient of skewness and Interpret its value for the data given below: (07)

Group	40 - 50	50 – 60	60 – 70	70 80	80 – 90
Frequency	12	15	16	15	12

Q. 4 Compute the index numbers using simple aggregative method with 1952 as base year:

Commodity 1952 1953 1954 1955 Wheat 21.3 25.4 30.2 25.2 Rice 16.3 18.9 19.3 15.9 14.0 16.3 18.5 Barley 15.9 14.3 11.5 13.6 Jawar 11.3 13.6 13.9 Grams 13.0 13.5

Q. 5 a. The following sample observations were randomly selected:

X	4	5	3	6	12
Y	4	6	5	7	8

Determine the value of \hat{y} when x is 7.

b. Compute 3 year and 5 year moving averages from the following data:

Year	1982	1983	1984	1985	1986	1987	1988	1989
Factory sales in	6.2	7.8	8.3	9.3	8.6	7.8	8.1	7.9
Millions								

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Page 2 of 2 (Stat)

(13)

(07)

(06)