SG7

1119 Warning:- Please write your Roll No. in the space provided and sign. Roll No----------

Statistics (Objective) (Session 2015-17 to 2018-20) Sig. of Student ----------

(Inter Part – I) **Paper (I)**

Time Allowed:- 20 minutes **PAPER CODE 2181** Maximum Marks:- 17

Note:- You have four choices for each objective type question as A, B, C and D. The choice which you think is correct; fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question. Write **PAPER CODE**, which is printed on this question paper, on the both sides of the Answer Sheet and fill bubbles accordingly, otherwise the student will be responsible for the situation. Use of Ink Remover or white correcting fluid is not allowed.

Q. 1

1) In which sense "Statistics" mean numerical data:-
(A) Singular (B) Plural (C) Both (a) & (b) (D) None of these

2) "Statistics" must be:-
(A) Comparable (B) Not comparable (C) Discrete in nature (D) Qualitative in nature

3) The average of lower and upper class limits is called:-
(A) Class boundary (B) Class frequency (C) Class mark (D) Class limit

4) Geometric mean of the numbers "0,1,2,5,9" is:-
(A) 2 (B) 5 (C) -5 (D) Not possible

5) Mean of a Constant is:-
(A) Unknown (B) ∞ (C) Constant itself (D) Not possible

6) The most suitable average in case of rates and ratio is:-
(A) G.M (B) A.M (C) H.M (D) Median

7) The first moment about mean is:-
(A) Zero (B) 1 (C) S.D (D) Variance

8) Co-efficient of variation is a measure of:-
(A) Relative Dispersion (B) Skewness (C) Absolute dispersion (D) None of these

9) If the dispersion is small, then the standard deviation is:-
(A) Large (B) Zero (C) Small (D) Negative

10) In fixed base method, the base period is:-
(A) Fixed (B) Constant (C) Not fixed (D) Zero

11) The index number for base year is always taken as:-
(A) 50 (B) 100 (C) 150 (D) 200

12) Two coins are tossed, probability of getting head on the first coin is:-
(A) $\frac{2}{4}$ (B) 1 (C) Zero (D) 4

13) Two coins are tossed, the probability that both faces will be matching is given by:-
(A) $\frac{2}{4}$ (B) $\frac{1}{4}$ (C) Zero (D) 4

14) A discrete probability function, '$f(x)$' is always:-
(A) Non-negative (B) Negative (C) Zero (D) None of these

15) In a discrete probability distribution, the sum of all probabilities is always equal to:-
(A) One (B) Zero (C) 9 (D) -5

16) The binomial distribution becomes positively skewed when:-
(A) $p = 0$ (B) $p > \frac{1}{2}$ (C) $p < \frac{1}{2}$ (D) $p = \frac{1}{2}$

17) In Hypergeometric distribution, trials are:-
(A) Independent (B) Dependent (C) Fixed (D) None of these

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1119 Warning:- Please, do not write anything on this question paper except your Roll No.

Statistics (Subjective) (Session 2015-17 to 2018-20) **Paper (I)**

Time Allowed: 2.40 hours (Inter Part - I) Maximum Marks: 68

Section ---------- I

2. Answer briefly any Eight parts from the followings:- 8 × 2 = 16

(i) Define Variable.

(ii) What is meant by Secondary data?

(iii) What do you understand by measure of central tendency?

(iv) Define harmonic mean with its formula.

(v) In a moderately skewed distribution, Mean = 25 and Mode = 31. Find the value of Median

(vi) For a frequency distribution of a variable X, it is given that $X = 10 + 5u$, $\Sigma f = 125$, $\Sigma fu = -45$. Find the value of mean.

(vii) What do you understand by the term 'quantiles'?

(viii) Define composite index number.

(ix) Differentiate between un-weighted and weighted index numbers.

(x) Enlist any four uses of index numbers.

(xi) If Paasche's index number = 74.76 and Fisher's I.No = 75.76, then find the Laspeyre's I.No.

(xii) Given $\Sigma W = 20$, and $\Sigma WI = 1800$. Find the cost of living index number by weighted average of Price-relatives method.

3. Answer briefly any Eight parts from the followings:- 8 × 2 = 16

(i) Define mean deviation.

(ii) Find quartile deviation and co efficient of quartile deviation of 7.4, 7.4, 7.4, 7.4, 7.4 and 7.4

(iii) Define platy Kurtic data. Give one example from real life.

(iv) Define negatively skewed data. Give one example from real life.

(v) Find Bowley's Coefficient of Skewness if $Q_1 = 84$, $Q_3 = 79$ and median = 81.

(vi) Define mutually exclusive and exhaustive events.

(vii) Write 3 properties of random experiment.

(viii) Give one simple example of independent events.

(ix) What is probability of a double six when 2 dice are rolled?

(x) Define Coefficient of Kurtosis i.e ; β_2

(xi) Give 3 examples of tabuler presentation.

(xii) Which graph can be made from quantitative data, name any three graphs?

4. Answer briefly any Six parts from the followings:- 6 × 2 = 12

(i) Define Continuous random variable.

(ii) Define Probability density function.

(iii) What are the properties of probability distribution?

(iv) Find K for the probability distribution

x	0	1	2
$P(x)$	3 K	2 K	K

(v) Find E (X) when Var (X) = 4, $E(X^2) = 20$

(vi) Define Binomial Probability Distribution

(vii) What are parameters of Binomial Distribution?

(viii) Define Hypergeometric Experiment.

(ix) If N = 10, n = 5, K = 3 Find mean of Hypergeometric Distribution by using formula of mean.

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Section ---------- II

(8 ×3 =

Note: Attempt any three questions.

5 (a) Find geometric mean for the distribution.

Weights	100 – 104	105 – 109	110 – 114	115 – 119	120 – 124
Frequency	24	30	45	65	72

(b) Calculate the arithmatic mean for the following data.

Marks	10 – 19	20 – 29	30 – 39	40 -49	50 – 59
No- of Students	5	25	40	20	10

6 (a) Calculate Standard deviation using arithmatic mean and also using provisional mean (23).
X = 16 , 18 , 25 , 23 , 29 , 30 , 35 , 40 , 43 , 50

(b) Given the following information
$\Sigma f = 290$, $\Sigma fx = 2610$, $\Sigma fx^2 = 23780$, $\Sigma fx^3 = 219530$, $\Sigma fx^4 = 2056100$
Calculate first four moments about the arithmatic mean.

7 (a) Find the Index number of prices from the following data taking 1970 as a base period.

Years:	1970,	1971,	1972,	1973
Prices:	15,	19,	20,	30

(b) From a pack of 52 Cards a Card is drawn. Find the probability that drawn card is
(i) a picture card, (ii) a red card

8 (a) A continuous random variable has a probability density function:

$f(x) = a(x + 3)$; $2 \le x \le 8$

$= 0$; elsewhere

Find (i) a (ii) $p(x \le 6)$

(b) Given that $E(X^2) = 400$
$S D(X) = 12$
Find $E(X)$ and c.v.

9(a) If 20% of the items produced by a machine are defective. Determine the probability tha
Chosen at random (i) 3 items are defective (ii) at least 4 items are defective.

(b) If X has Hypergeometric distribution with n = 4 , N = 10 and K = 5 then Find
(i) $P(X \le 1)$ (ii) $P(X \ge 3)$

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