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Inter - (Part-I)-A-2022

Roll No._____ to be filled in by the candidate

(For All Sessions)

Paper Code	6	1	8	8

Statistics .(Objective Type)

Time:20 Minutes RwP-22 **Marks:17**

NOTE: Write answers to the questions on objective answer sheet provided. Four possible answers A, B, C & D to each question are given. Which answer you consider correct, fill the corresponding circle A, B, C or D given in front of each question with marker or pen ink on the answer sheet provided.

1.1. The probability of sure event is.

(A) 0 (B) 1 (C) >1 (D) <1

2. The amount of milk produced by cow is _____ variable.

(A) Discrete (B) Continuous (C) Qualitative (D) None

3. If E(X)=4, the arithmetic Mean will be.

(A) 4 (B) Zero (C) 8 (D) 1

4. In binomial experiments, each trial has:

(A) One outcome (B) Two outcomes (C) Three outcomes (D) Four outcomes

5. In hypergeometric distribution N = 6, n = 2, K = 3, then mean is:

(A) 2 (B) 3 (C) 1 (D) 4

6. The grouped data are also called.

(A) Raw data (B) Primary data (C) Secondary data (D) Qualitative data

7. The average value of a lower and upper limits of a class is called:

(A) Class boundary (B) Class frequency (C) Mid point (D) Class interval

8. Graph of time series is known as:

(A) Histogram (B) Ogive (C) Historigram (D) Polygon

9. Geometric Mean of the values 2, 4, -3, 6, 0 is:

(A) -3 (B) 0 (C) 3 (D) Cannot be computed

10. We must arrange the data before calculating:

(A) Mode (B) Median (C) Mean (D) G.M

11. If 10% is added to each value of variable, the geometric mean of new variable is added by:

(A) 10% (B) No change (C) 10 (D) 110

12. Variance remains unchanged by change of:

(A) Scale (B) Origin (C) Both (A) and (B) (D) None

13. A measure of dispersion is always:

(A) Zero (B) Positive (C) Negative (D) None of these

14. Second moment about Mean is called:

(A) Mean (B) S.D (C) C.V. (D) Variance

15. In chain base method, the base period is:

(A) Fixed (B) Changed (C) Constant (D) None of these

16. Base year weighted index numbers are:

(A) Laspeyre's Index (B) Paasche's Index (C) Fisher Index (D) Marshall Index

17. The probability of an event always lies between:

(A) Zero and 2 (B) -1 and +1 (C) Zero and 1 (D) -2 and +2

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Statistics (Essay Type)

Time: 2:40 Hours **Marks:68**

Section - I

RwP-22

2- Write short answers of any eight parts from the following. **2 x 8 = 16**

i. Define statistics.

ii. Distinguish between discrete variable and continuous variable.

iii. Find the G.M from the following values. 4, 5,10, 0, 20.

iv. Define Median.

v. Write down the advantages of mode.

vi. What are merits of mode?

vii. If sum of deviation from X = 15 for 10 values is 25, then find A.M.

viii. Define weighted mean.

ix. Define composite index number.

x. If paasche's I.No = 74.76 and Fishers I.No = 75.76 then find Laspayer's I.No = ?

xi. If $\sum P_o q_o = 362, \sum P_1 q_o = 428, \sum P_o q_1 = 398, \sum P_1 q_1 = 470$ *then* find Fisher's Ideal I.No.

xii. Define link relative.

3- Write short answers of any eight parts from the following. **2 x 8 = 16**

i. Define "Histogram".

ii. Define relative frequency.

iii. Define Quartile deviation.

iv. Compute coefficient of quartile deviation, if $Q_1 = 12.50$ and $Q_3 = 48.36$

v. Define range. Also give an example.

vi. Define mean deviation.

vii. Compute coefficient of standard deviation if Mean = 125 and standard deviation = 2.

viii. Compute mean coefficient of dispersion if mean deviation = 3.92 and Mean = 16.25

ix. Make a sample space if we toss a fair coin three times.

x. How many permutations can be formed from the word "STATISTICS"?

xi. Give the statement of addition Law of probability for two non-mutually exclusive events.

xii. State the multiplication law of probability for independent events.

4- Write short answers of any six parts from the following. **2 x 6 = 12**

i. What are random numbers?

ii. Explain the properties of the random experiment.

iii. What is probability density function?

iv. Differentiate between discrete and continuous random variables.

v. If E(X) = 3 and E(Y) = 2.5, then find E(X+Y).

vi. What is a binomial distribution?

vii. What are parameters of binomial distribution?

viii. State the formula of hypergeometric distribution.

ix. In hypergeometric distribution n = 5, K = 4 and N = 12 then find its mean.

Section - II

8 x 3 = 24

NOTE : Answer any three questions from the following.

5.(a) The frequency distribution given below has D = X −8 Find the Geometric Mean.

D	−12	−8	−4	0	4	8	12	16
f	2	5	8	18	22	13	8	4

(b) Compute the median and mode of the following distribution.

Classes	0-7	7-14	14-21	21-28	28-35
f	5	8	7	15	5

04+04

6.(a) Compute mean deviation from the data given below using mean.

Classes	5-9	10-14	15-19	20-24	25-29
f	5	8	12	10	5

(b) Calculate Bowley's coefficient of skewness for the following data.

Groups	2-4	4-6	6-8	8-10	10-12
frequency	3	5	7	3	2

04+04

7.(a) Compute Fisher's index number for the following data.

commodities	Base year		Current year	
	Price	Quantity	Price	Quantity
A	7	70	5	49
B	5	27	7	28
C	10	35	9	29
D	9	50	4	42

04+04

(b) A pair of dice is thrown. Find the probability of getting a total of either 5 or 11.

8.(a) Find the missing value of 'A' from the following probability distribution.

x	2	3	4	5	6
$P(x)$	0.01	0.25	0.40	A	0.04

Also find $E(x)$

(b) A continuous random variable X has a density function. $f(x) = 2x,\ 0 \le x \le 1$ find $P(0 < x < 0.2)$

04+04

9.(a) A fair coin is tossed 5 times. What is the probability of getting.
i) Exactly 3 heads ii) At least 3 heads

(b) Find $P(x \le 2)$ for hypergeometric distribution having N = 8, K = 5, n = 6

04+04