Sig. of Supdt.

KT-XI-14(A)

# STATISTICS - (Part-I)

Paper – I

Roll No.

Fic. No.....

Fic. No.....

**Time Allowed : 3 Hrs.** **Total Marks : 75**

***Note:*** There are three sections of this paper, A, B, & C. Carefully read the instructions for each section and attempt accordingly.

**Time Allowed : 20 Mins.** **SECTION – A** **Total Marks : 15**

**Note: Use this sheet for this section. No. mark will be awarded for cutting, erasing or over writing.**

**Q. 1 Insert the correct option (a, b, c, d) in the empty box opposite to each part. Each part carries one mark. Any kind of Mark Left / Written is strictly prohibited. Mobile Phone is strictly prohibited in Examination Hall.**

i) Coefficient of variation is zero. If ..... Is zero.
(a) A.M (b) Median (c) Standard Deviation (d) Moment

ii) Number of classes is equal to range divided by .....
(a) 100 (b) Class interval (c) Mid point (d) None of these

iii) For a relative frequency we divide the class frequency by .....
(a) 100 (b) f (c) Cumulative frequency (d) None of these

iv) If x = -2, -1, 20, 40 then ..... cannot be calculate.
(a) A.M (b) H.M (c) G. M (d) None of these

v) If G.M=60 and A.M=110.2 H.M is .....
(a) 28 (b) 38 (c) 32.7 (d) 24

vi) Fisher's index number is ..... of Laspyre's and Pasche's index numbers
(a) A.M (b) G.M (c) H.M (d) None of these

vii) Probability lies between .....
(a) 0 to 1 (b) -1 to 1 (c) 2 to 1 (d) None of these

viii) All possible outcomes of an experiment is called .....
(a) Event (b) Dependent event (c) Sample race (d) None of these

ix) $P(A)+P(\overline{A})=?$
(a) 1 (b) P(S) (c) $\phi$ (d) None of these

x) Variance of 1001,1002 ..... 1009 is
(a) 8 (b) 6.67 (c) 3.4 (d) None of these

xi) Variance of U [1, 3] is
(a) $4/12$ (b) 0.33 (c) $2/12$ (d) None of these

xii) If $f(x)=kx; 0 \leq X \angle 2$ where K is equal to .....
(a) 0.6 (b) 0.5 (c) 0.9 (d) 2

xiii) If b(15; 0.4) then P(x=5) is .....
(a) 0.2 (b) 0.3 (c) 0.1 (d) 0.4

xiv) If n=10, P=0.4 then Skewness is .....
(a) 0.01 (b) 0.013 (c) 0.012 (d) 0.014

xv) There are ..... Parameters in binomial distribution
(a) 4 (b) 2 (c) 3 (d) 0

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# STATISTICS - (Part-I)

Paper – II

Time Allowed : 2:00 Hrs. Marks :25

Note : Mobile Phone is strictly banned in Examination Hall.

**Note : Attempt any two questions. Each question carries equal marks.**

Q. 1 Find the missing values such that the given distribution is a probability distribution.

| X | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| f(x) | 0.01 | 0.25 | 0.4 | ? | 0.4 |

Q. 2 The following data gives the ages of people in locality who are unemployed.

21, 50, 35, 39, 48, 46, 36, 54, 42, 30, 29, 42, 32, 40, 34, 31, 35, 37, 52, 44, 39, 45, 37, 33, 53, 41, 42, 46, 43, 47 ,41, 26, 48, 25, 34, 37, 33 ,36 ,27, 54, 36, 41 ,32, 23 ,39 ,28, 44, 45, 38, 40

Prepare a frequency table taking suitable class interval. Also compute class boundaries, Mid point.

Q. 3 Compute index numbers for the year 1995 and 1996 from the following data taking 1994 as base and using.

i) Mean

ii) Median

iii) Geometric mean as an average

**Average Annual Price**

| Commodities | 1994 | 1995 | 1996 |
|---|---|---|---|
| Rice | 30 | 35 | 60 |
| Wheat | 8 | 10 | 15 |
| Tea | 20 | 22 | 40 |
| Tobacco | 120 | 122 | 160 |

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# STATISTICS - (Part-I)

Paper – I

Time Allowed : 2:40 Hrs. **Section – B** Marks : 36

Note : Mobile Phone is strictly banned in Examination Hall.

**Q. 2 Write a short answer of any NINE of the following parts. Each part carries equal marks.**

(i) State the empirical relation between mean, median and mode.
(ii) What is semi-interquartile range?
(iii) What is meant by coefficient of variation?
(iv) Discuss problems in the construction of index number?
(v) Define probability and discuss its types?
(vi) Define mathematical expectation?
(vii) Explain the concept of random variable.
(viii) Write the formula for uniform distribution.
(ix) Define multiple bar chart and sub divided bar chart?
(x) Explain the difference between parameter and statistic.
(xi) Define conditional probability.
(xii) Define hyper geometric distribution.

## Section – C

Marks : 24

**NOTE: Attempt any three questions. Each question carries equal marks.**

Q. 3 Calculate the K-Pearson's coefficient of Skewness from the following data.

| Marks | 0-1 | 1-2 | 2-3 | 3-4 | 4-5 | 5-6 | 6-7 | 7-8 |
|---|---|---|---|---|---|---|---|---|
| Frequency | 10 | 40 | 20 | 10 | 10 | 20 | 40 | 10 |

Q. 4 Prepare fixed base index numbers from the chain base index numbers given below

| Year | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 |
|---|---|---|---|---|---|---|
| Index Number | 92 | 104 | 106 | 98 | 103 | 101 |

Q. 5 Determine the probability of a sum 8 or 12 comes up in single toss of a pair of fair dice.

Q. 6 Find E(X) and E(X2).

| X | 0 | 1 | 2 | 3 |
|---|---|---|---|---|
| F(x) | 1/4 | 1/6 | 2/6 | 1/4 |