



Name

Roll No

1- ہر سوال کے ساتھ چار دائرے دیئے گئے ہیں، صرف صحیح جواب والا دائرہ بھر دیں۔

2- دائروں کو خفیہ (بھرنے) کے لئے علیحدہ علیحدہ دائرے کا استعمال کریں۔

3- آپ میں ایک سے زائد دائرے بھرنے سے جواب غلط قرار ہوگا۔

Marks : 15

Time Allowed: 20 Minutes

SECTION - A

- 1 If x is uniform variable over the interval $(5, 10)$, then mean of x is: ☐ 5 ☐ 7.5 ☐ 10 ☐ 15
- 2 The whole aggregate or universe is called: ☐ Parameter ☐ Statistic ☐ Sample ☐ Population
- 3 An estimator is: ☐ Variable ☐ Constant ☐ Fixed value ☐ Random variable
- 4 When a single value is calculated from the sample for population parameter is called: ☐ Point estimator ☐ Interval estimator ☐ Parameter ☐ None of these
- 5 Statistical inference makes inference about: ☐ Sample ☐ Population ☐ Both population and sample ☒ Estimate
- 6 Level of significance is the probability of: ☐ Type-I-Error ☐ Type-II-Error ☐ Not committing error ☐ Any of above
- 7 Degree of freedom for a (3×3) contingency table is: ☐ 4 ☐ 2 ☐ 1 ☐ None of these
- 8 An experiment design is: ☐ An architect ☐ A map ☐ A plan of experiment ☐ All these
- 9 All possible outcomes of a random experiment is called: ☐ Event ☐ Experiment ☐ Sample Space ☐ Exhaustive went
- 10 Probability of sure event is: ☐ 0 ☐ 1 ☐ 2 ☐ -1
- 11 Sum of probability is always equal to: ☐ 0 ☐ 1 ☐ 0.5 ☐ 2
- 12 If $S.D(x) = 2$ then $S.D(2x + 5)$ is: ☐ 4 ☐ 2 ☐ 8 ☐ 6
- 13 Parameters of Binomial Distribution are: ☐ P, q ☐ q, P ☐ n, P ☐ q, n
- 14 Mean of Bernoulli's distribution is: ☐ np ☐ nq ☐ p ☐ npq
- 15 All odd order moments about mean are: ☐ 0 ☐ 1 ☐ 0.5 ☐ 2

STATISTICS (NEW)

(PAPER - I)

Inter Part - II

(Fresh/Reappear)

Note: Time allowed for Section - B and Section - C is 2 Hours and 40 minutes.**Section - B**

Marks: 36

Q-II Answer any NINE parts: Each part carries FOUR marks.

1. Differentiate between experiment and random experiment with the help of example.
2. From a pack of 52 cards, two cards are drawn randomly. What is the probability that they are queen?
3. Consider the following discrete probability distribution:

X	3	8	10
F(x)	0.2	0.7	0.1

Determine the Mean, variance and S.D

4. Differentiate between Discrete variable and Continuous variable with help of example
5. Write down properties of binomial experiment.
6. A random variable x is binomially distributed with mean 38 and S.D 2.94. Find n and P .
7. If Z has a standard Normal distributed, find.
8. (a) $P[-2.63 < Z < 2.63]$ (b) $P[Z > 4.11]$
9. Define normal distribution. Write down any four properties of normal distribution.
10. Differentiate between simple random sampling and stratified random sampling with the help of example.
11. Differentiate between Point estimator and Interval estimator.
12. Write down the general procedure for testing hypothesis for population proportion (p).
13. Explain the following:
 - (a) Association of Attributes
 - (b) Yules coefficient of Association.

Section - C

Marks: 24

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

- III If two dice are rolled. Find the probability that sum of two dots is:
 - (a) greater than 7
 - (b) equal to 6
 - (c) Less than or equal to 6
- IV The density function of a continuous random variable x is:

$$f(x) = \begin{cases} Kx^2, & 0 \leq x \leq 1 \\ 0 & \text{otherwise} \end{cases}$$

- Find (i) Value of constant K (ii) $P(x \geq 0.5)$

-V Show that mean of binomial distribution is np and variance is npq .

-VI A random variable of size 36 is drawn from a normal population gives.

$\bar{X} = 25, \sigma^2 = 16$ Test the hypothesis $H_0: \mu = 19.6$ against $H_1: \mu > 19.6$ at

$\alpha = 0.01$

112501

STATISTICS Paper-II Part-I

Attempt any three questions of the following questions. All questions carry equal marks. Marks: 15

- I. Calculate quartile deviation (Q.D) and coefficient of Q.D for the following grouped data.

Marks	10-19	20-29	30-39	40-49	50-59
Frequency	3	8	14	7	4

- II. Find the regression line of y on x for the data given below.

x :	3	5	6	9	10	12	15	20	22	28
y :	10	12	15	18	20	22	27	30	32	34

- III. Calculate Median, D_6 and P_{25} for the distribution of the values of 140 fruits given in the following table.

x :	30	25	10	36	50	44	40	55	60
y :	14	8	3	18	22	23	27	17	8

- IV. Find the price relatives for the following data of salt prices (per kg) by using the price of 2005 as a base year.

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013
Price	15	14	20	21	24	23	25	18	27