

Roll Number
 In Figures: _____
 In Words: _____

PR XI (01) 18
STATISTICS
 Inter Part-I
 (Fresh / Reappear)

Superintendent
 Signature / Stamp:

Fig. No. _____
 (For Board's Office use only)

STATISTICS
 Inter Part-I
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Time Allowed: 3 Hours

Note: There are THREE sections in this paper i.e. Section A, B and C.

Attempt Section-A on the same paper and return it to the Superintendent within the given time.

No marks will be awarded for **Cutting, Erasing or Overwriting**. Marks of Identification will lead to UFM case, **Mobile Phone** etc are not allowed in the examination hall.

Marks: 85

Time Allowed: 20 minutes

Marks: 18

Q-I Write the correct option i.e. A, B, C or D in the empty box provided opposite to each part.

i.	Any numerical value calculated from sample is called.....	A. Parameter	B. Statistic	C. Population	D. None of these	B
ii.	A variable having values refer to non-numerical qualities, is called variable.	A. Quantitative	B. Discrete	C. Qualitative	D. None of these	C
iii.	For construction of frequency polygon we draw.....on x-axis.	A. Class marks	B. Class boundaries	C. Class limits	D. None of these	B
iv.	The median of 5,3,2,7,10 is.....	A. 2	B. 5	C. 7	D. None of these	B
v.	For two positive values of a variate, the square of G.M is the of A.M and H.M.	A. Product	B. Sum	C. Difference	D. None of these	A
vi.	Variance is the of standard deviation.	A. Square root	B. Square	C. Reciprocal	D. None of these	B
vii.	If $b_2 = 3$ then the distribution is.....	A. Leptokurtic	B. Mesokurtic	C. Platykurtic	D. None of these	B
viii.	Fishers index number is..... of Laspyre's and Paasches index numbers.	A. A.M	B. H.M	C. G.M	D. None of these	C
ix.	The index number for the base period is always equal to.....	A. 1	B. 10	C. 100	D. 1000	C
x.	A pair of coin and dice are rolled simultaneously, the number of sample points are.....	A. 36	B. 4	C. 8	D. 12	D
xi.	$P(A) + P(\bar{A}) = \dots\dots\dots$	A. Zero	B. $P(S)$	C. ϕ	D. None of these	B
xii.	$P(S) = \dots\dots\dots$	A. One	B. Zero	C. 0.5	D. None of these	A
xiii.	If $E(x) = \frac{2}{3}$ and $E(x^2) = \frac{8}{9}$, then standard deviation is.....	A. $\frac{4}{9}$	B. $\frac{9}{4}$	C. $\frac{2}{3}$	D. None of these	C
xiv.	If $f(x) = Kx$ $0 \leq x \leq 2$, then for p.d.f the value of K is.....	A. 0.6	B. 0.5	C. 0.9	D. None of these	B
xv.	A mean of uniform distribution over the interval $[-1, 1]$ is.....	A. $\frac{1}{2}$	B. 2	C. Zero	D. None of these	C
xvi.	If X is a random variable and "a" is constant then $\text{Var}(ax) = \dots\dots\dots$	A. $a^2 \text{var}(x)$	B. $a \text{var}(x)$	C. $aS.D(x)$	D. None of these	A
xvii.	The mean of binomial distribution is..... its variance.	A. Equal to	B. Less than	C. Greater than	D. None of these	C
xviii.	If x is a random variable and "a" is any constant then $E(ax) = \dots\dots\dots$	A. $a^2 E(x)$	B. $a E(x)$	C. $E(x)$	D. None of these	B

PR XI (01) 18
STATISTICS

P-380

Inter Part – I
 (Fresh / Reappear)

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

Marks: 40

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

1. Distinguish between descriptive and inferential statistics.
2. Discuss the importance of statistics in any two disciplines.
3. Differentiate between primary and secondary data.
4. Illustrate by pie chart the following data of expenditure.

Items of expenditure	Food	Clothing	Housing	Fuel lighting	Miscellaneous
%age of total expenditure	65	10	12	5	8

5. State any four properties of arithmetic mean.
6. Find the G.M of 1,7,18,65,91 and 103
7. What is meant by the term "coefficient of variation"?
8. Compute the price relative for the following data using 1989 as base.

Year	1987	1988	1989	1990	1991	1992
Price	160	162	145	165	170	175

9. Differentiate between fixed base method and chain method.
10. How many distinct permutation can be formed from all the letters of the word "INFINITY"?
11. Find probability distribution of the number of heads when a coin is tossed three times.
12. Find mean of the following distribution.

X	0	1	2	3
f(x)	0.3	0.5	0.1	0.1

13. The mean and variance of a binomial distribution are 42 and 12.6 respectively. Find P and n.

Section – C

Marks: 27

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

Q-III Compute median, Q1 and Q3 from the following distribution of age group.

Age in year	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64
Frequency	2	10	19	27	16	27	6	5	3	2

Q-IV Following are the marks obtained by two students during the first 8 monthly tests of their statistics class.

Student – I	113	118	105	109	120	117	115	115
Student – II	10	9	20	20	12	3	20	2

Who is the more consistent student.

Q-V State and prove addition theorem of probability for not mutually exclusive events.

Q-VI The probability that a patient recovers from a rare blood disease is 0.5. If 10 people are known to have contracted this disease. What is the probability that. i. Atleast 10 survive ii. From 3 to 8 survive iii. Exactly 5 survive.