Roll Number	PR XI (01) 17	Superintendent
In Figures: _____	**STATISTICS**	Signature / Stamp:
In Words: _____	Inter Part-I	
_____	(Fresh / Reappear)	
	Fic. No. _____	
	(For Board's Office use only)	

STATISTICS

Inter Part-I
(Fresh / Reappear)

Time Allowed: 3 Hours

Marks: 85

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.

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.

#		A	B	C	D	
i.	Class width of $2.45 - 5.45$ is.....	A. 4	B. 5	C. 3	D. None of these	☐
ii.	Class boundaries of $2.05 - 3.05$...	A. $2.045 - 3.055$	B. $2.045 - 3.065$	C. $2.45 - 3.45$	D. None of these	☐
iii.	Mean = ...	A. Mode – Mean	B. $\dfrac{3Md - mode}{2}$	C. Mean – Mode	D. $\bar{x}$ – M.D	☐
iv.	If $\sum (x - \bar{x}) = 20$. It is	A. Possible	B. Not possible	C. 20	D. Zero	☐
v.	G.M of $(x + A)$ = ...	A. G.M of $X + A$	B. G.M of $X + nA$	C. G.M of X	D. G.M of A	☐
vi.	$E(x - a)$ = ...	A. $E(x) + a$	B. $E(x) - a$	C. $E(x)$	D. $aE(x)$	☐
vii.	m_2 = ...	A. $m_2' - m_1'^2$	B. $m_2' - m_1'$	C. $m_2' - m_3'$	D. None of these	☐
viii.	S.D of 2, 2, 2, 2, 2 is......	A. 0	B. 2	C. 16	D. None of these	☐
ix.	In symmetric distribution......	A. A.M > median > mode	B. A.M = median = Mode	C. Mode > Median > A.M	D. $b_1 > 0$	☐
x.	The index number for the ....is always equal to 100.	A. Base period	B. Chain base method	C. Laspeyre's price Index No	D. None of these	☐
xi.	In Laspeyre's price Index number P_{on} = ... x 100.	A. $\dfrac{\sum p_n q_o}{\sum p_0 q_o}$	B. $\dfrac{\sum p_o q_o}{\sum p_n q_n}$	C. $\dfrac{\sum p_n}{\sum p_o}$	D. 100	☐
xii.	Multiplication law for independent events $P(A \cap B) = P(B)$.....	A. $P(A / B)$	B. $P(B / A)$		C. $P(A)$	D. 1	☐
xiii.	A 5 appears in a six faces cubical die then the probability is.......	A. $\dfrac{1}{6}$	B. $\dfrac{5}{6}$		C. 1	D. None of these	☐
xiv.	In two dice rolling experiment the probability of two aces is......	A. $\dfrac{2}{36}$	B. $\dfrac{1}{36}$	C. $\dfrac{1}{8}$	D. $\dfrac{18}{36}$	☐
xv.	The variance of 1001, 1002.....1009 is	A. 8	B. 6.67	C. 3.4	D. 9	☐
xvi.	If mean of uniform distribution is 0 and variance = 0.33 then limits	A. $[-1, 2]$	B. $[-1, 0]$	C. $[-2, 2]$	D. $[-1, 1]$	☐
xvii.	Coefficient of variation of binomial distribution is	A. $\dfrac{q}{np}$	B. $\sqrt{\dfrac{q}{np}}$ x 100	C. $\sqrt{npq}$ x 100	D. np	☐
xviii.	The amount of milk produced yearly by a particular cow is example of.......random variable.	A. Discrete	B. Continuous	C. Dependent	D. Independent	☐

STATISTICS

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 quantitative and qualitative variables.

   (i) The number of literate males (ii) The heights of fathers (iii) The income in rupess (iv) The number of girls with blue eyes.

2.   What do you understand by term classification? What are different types of classification?

3.   Construct frequency polygon from frequency distribution.

Class limits	40 – 49	50 – 59	60 – 69	70 – 79	80 – 89	90 – 99	100 – 109
Frequency	1	3	4	5	4	2	1

4.   Define geometric mean, mean and harmonic mean.

5.   Find median Q_1, Q_3 and D_5 of the following data.

X	15	20	25	30	35	40
F	1	1	2	3	2	1

6.   Compute standard deviation of data given 35, 36, 47, 49, 53.

7.   Calculate coefficient of variation of following data n = 150, $\sum(x_1 - 100) = 180$, $\sum(x_1 - 100)^2 = 245320$

8.   Define index number with examples.

9.   Let A and B be the two possible outcomes of an experiment and suppose   P (A) = 0.33, P (A ∩ B) = 0.25, P (B) = P

   and P (A U B) = 0.75. Find P, If A and B are not mutually exclusive.

10.   Out of eighty members of club 30 drink tea, 20 drink coffee and 10 drink both. One member is selected at random find the probability that he (i) Drinks either tea or coffee. (ii) Drinks only tea   (iii) Drinks neither tea nor coffee.

11.   A continuous random variable x that can assume values between x = 2 and x = 4 has a density function given by $f(x) = \dfrac{x + 1}{8}$ (i) Find P (x < 3)   (ii) Find P (2 < x < 3).

12.   In binomial distribution P = 0.2, n = 400. Find mean and variance.

13.   Find the missing value of probability distribution of x.

X	2	3	4	5	6
F (x)	0.01	0.25	0.4	?	0.4

   If Y = 2x – 8, then show that E (y) = 2 E (x) – 8 .

Section – C

Marks: 27

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

Q-III   Who is better on the average.

Sales representative A	4	7	5	9
Sales representative B	2	12	4	8

Q-IV   Compute wholesale price index number using the following data.

Index (I)	473.6	390.2	510.2	413.3	424.4
Weight (w)	31	30	18	17	4

Q-V   What is the probability of obtaining?

   (i).   At least 3 sixes   (ii)   Exactly 4 Sixes

   When a perfect cubical die is thrown 5 times?

Q-VI   Find mean and variance of uniform distribution.