	(Objective Type)	Inter (Ist – A – Exam – 2024)	
Time :	20 Minutes	Inter (Part – I)	Session (2022 – 24) & (2023 – 25)
Marks :	17	pakcity.org	

Note : Four choices A , B , C ,D to each question are given. Which choice is correct fill that circle in front of that Question No. on the Objective Bubble Sheet. Use Marker or Pen to fill the circles. Cutting or filling two or more circles will result in Zero Mark in that Question.

Q.No.1 (1)	A quantity calculated from population is called : (A) Frequency (B) Statistic (C) Parameter (D) Sample
(2)	Measurement usually provide : (A) Qualitative Data (B) Discrete Data (C) Primary Data (D) Continuous Data
(3)	Cumulative Frequency Curve is also called : (A) Histogram (B) Frequency Curve (C) Ogive (D) Historigram
(4)	In a Statistical table , Column Captions are called : (A) Box Head (B) Stub (C) Body (D) Title
(5)	The value of the data lying between Q_1 and Q_3 are : (A) 50% (B) 25% (C) 75% (D) 100%
(6)	The Sum of Squares of deviation is least from : (A) Median (B) Mean (C) Mode (D) G.M
(7)	Mean Deviation is least , if deviation are calculated from : (A) Mean (B) Mode (C) Median (D) G.M
(8)	Var (2x ± 3) is : (A) 5 Var (x) (B) 4 Var (x) (C) 4 Var (x) + 3 (D) 4 Var (x) + 9
(9)	In Fixed Base Method , the base period should be : (A) Abnormal (B) Middle (C) Normal (D) For Distant
(10)	Simple Index Number involves Commodities : (A) 2 (B) 3 (C) 4 (D) 1
(11)	A Coin and a Die can throw together : (A) 12 Ways (B) 6 Ways (C) 2 Ways (D) 36 Ways
(12)	Probability of drawing a Card of Ace is : (A) $\frac{1}{2}$ (B) $\frac{1}{13}$ (C) $\frac{1}{4}$ (D) $\frac{1}{5}$
(13)	$E(x^2) = 29$ and $E(x) = 4$ then Var (x) =.... : (A) 25 (B) 5 (C) 13 (D) 33
(14)	A Discrete Probability distribution may be presented by : (A) Table (B) Mathematical Equation (C) Diagram (D) All these
(15)	In a Binomial Distribution n = 10 , p = 0 . 5 then Mean is : (A) 0 . 5 (B) 5 (C) 10 (D) 2 . 5
(16)	The Parameters of Hypergeometric Distribution are : (A) 3 (B) 2 (C) 1 (D) 4
(17)	The Sum of p and q is always : (A) 0 (B) 2 (C) 1 (D) 4

Statistics (Subjective)	Inter (Ist – A – Exam 2024)	Time 2 : 40 Hours Marks : 68

Note : It is compulsory to attempt any (8 – 8) Parts each from Q.No.2 and Q.No.3 while attempt any (6) Parts from Q.No.4. Attempt any (3) Questions from Part – II .Write same Question No. and its Part No. as given in the Question Paper.

(Part - I)

22 x 2 = 44

Q.No.2	(i)	Differentiate between Variable and Constant.	(ii)	Write down the Limitations of Statistics. (any two)
	(iii)	Describe Qualitative Variable.	(iv)	Enlist any two merits of Median.
	(v)	Define Central Tendency.	(vi)	Find Mode : 2 , 4 , 6 , 8 , 10 , 12
	(vii)	Find Harmonic Mean (H . M) : If $\sum f = 80$, $\sum(f/x) = 0.5\,8813$	(viii)	Find Median : 13 , 17 , 11 , 14 , 19 , 21 , 15
	(ix)	Define Paasche's Index Number .	(x)	Write down any two uses of an Index Number.
	(xi)	Describe any two limitations of Index Number.		
	(xii)	If Laspeyre 's Index Number = 105 . 4 , Paasche 's Index Number = 103 . 2 Find Fisher 's Ideal Index number.		
Q.No.3	(i)	Define Classification.	(ii)	Differentiate between Histogram and Historigram.
	(iii)	What is Pie Chart ? Explain.	(iv)	Write down names of Absolute Measures of Dispersion.
	(v)	If Range = 60 , Class Interval = 6 , then calculate No . of Classes .	(vi)	If Var (x) = 10 , find the Var (y) , If Y = 3x + 10
	(vii)	Define Skewness.	(viii)	If Standard Deviation of a distribution is 4 , find 2nd Moment about Mean.
	(ix)	Write down Sample Space , if " 3 " coins are tossed .	(x)	What is meant by Simple Event?
	(xi)	State Addition Law of Probability for Not Mutually Exclusive Events.	(xii)	If P(A) = 0 . 2 and P(B) = 0 . 15 find $P(A \cap B)$, if A and B are independent events.
Q.No.4	(i)	What is a Random Variable?	(ii)	Explain the Concept of Discrete Probability Distribution.
	(iii)	Given E(x) = 0 . 55, Var(x) = 1 . 35 and y = 2x + 1 Find E(y) and Var (y) .	(iv)	Write down the Properties of Expected Values.
	(v)	What is Binomial Experiment?	(vi)	A Random Variable ' x ' has a Binomial Distribution with n = 5 and P = 0 . 2 , find P (x = 2).
	(vii)	In a Binomial Distribution Mean = 2 . 4 and S.D = 1 . 2 Find the value of " n " .	(viii)	Enlist any two properties of Hypergeometric Experiment .
	(ix)	If N = 10 , n = 5 , k = 3 , find Mean of the Hypergeometric Distribution.		

P.T.O.

Q.No.5 (a) Find the Geometric Mean for the following data : **(04)**

Age (years)	11 – 20	21 – 30	31 – 40	41 – 50	51 – 60
f	6	7	9	6	4

(b) The Average Wage of 4 men is Rs 17/- per hour . What is the Average Wage of further 6 Men if the Average Wages of all 10 Men is Rs 20/- ? **(04)**

Q.No.6 (a) Find Coefficient of Quartile Deviation from the following Table : **(04)**

Weights (grams)	160 – 170	170 – 180	180 – 190	190 – 200	200 – 210	210 – 220
No . of Apples	7	13	30	42	35	23

(b) Given that $\sum f = 120$, $\sum fx = 296$, Mode = 2 . 944 and Second Moment about Mean is 1 . 4884 . Calculate Coefficient of Skewness . **(04)**

Q.No.7 (a) Calculate Chain Indices. **(04)**

Commodity	1928	1929	1930	1931
Rice	7 . 3	7 . 7	5 . 8	4 . 1
Wheat	7 . 5	5 . 5	3 . 6	2 . 7
LinSeed	7 . 0	8 . 0	6 . 5	4 . 2
Gur	6 . 3	7 . 3	6 . 2	4 . 2
Cotton	34 . 1	25 . 8	17 . 3	13 . 3
Tobacco	17 . 3	17 . 1	14 . 5	11 . 6

(b) A Pair of dice is rolled . Let " A " denote the event that the sum shown is " 6 " and " B " be the event that the two dice had the same no. Find : **(04)**
(i) P (A/B) (ii) P (B/A)

Q.No.8 (a) The Probability distribution of a Discrete Random Variable ' x ' is given by **(04)**
$f(x) = \binom{3}{x} \left(\frac{1}{4}\right)^x \left(\frac{3}{4}\right)^{3-x}$; x = 0 , 1 , 2 ,3 Find E (x) and E (x^2)

(b) A Continuous Random Variable " X " has Probability Density Function given by $f(x) = cx$, for $0 < x < 2$ Find (i) C (ii) P ($1 < x < 1.5$) **(04)**

Q.No.9 (a) If ' X ' is the number of successes with Probability of success is $\frac{1}{4}$ in each of 5 independent trails . Then , find (i) P (x = 0) (ii) P ($x \leq 3$) **(04)**

(b) Three balls are drawn from a bag containing 5 white and 3 black balls . If ' x ' denotes the number of white balls , then find the Probability Distribution of ' x ' and find its Mean. **(04)**

Bahawalpur Board-2023

Statistics	(B)	L.K.No. 1022	Paper Code No. 6183
Paper I	(Objective Type)	Inter (Ist – A – Exam – 2023)	
Time :	20 Minutes	Inter (Part – I)	Session (2020 – 22) to (2022 – 24)
Marks :	17		

Note : Four possible choices A , B , C ,D to each question are given. Which choice is correct fill that circle in front of that Question No. Use Marker or Pen to fill the circles. Cutting or filling two or more circles will result in Zero Mark in that Question.

Q.No.1 (1)	In Hypergeometric Distribution , successive trials are : (A) Independent (B) Dependent (C) Not Associated (D) Continuous
(2)	Binomial Distribution is : (A) Continuous (B) Qualitative (C) Symmetrical (D) Discrete
(3)	Variance of Hyper – Geometric Distribution : (A) $\frac{nk}{N}\left(1-\frac{k}{N}\right)\frac{N-n}{N-1}$ (B) npq (C) $\frac{nk}{N}\,\frac{N-n}{N-1}$ (D) $\frac{nk}{N}$
(4)	$E\left[x - E(x)\right]^2 = 49$, then S.D. (x) = -------- : (A) 49 (B) 07 (C) 13 (D) 36
(5)	Which is not possible in a Probability Distribution : (A) $P(x) = 0.5$ (B) $P(x) = \frac{1}{4}$ (C) $P(x) = 0.05$ (D) $P(x) = \frac{6}{5}$
(6)	When two dice are rolled , elements in Sample Space are : (A) 6 (B) 12 (C) 36 (D) 16
(7)	For two independent events A and B , $P(A \cap B)$ = : (A) 0 (B) $P(A)\,P\left(\frac{B}{A}\right)$ (C) $P(B)\,P\left(\frac{A}{B}\right)$ (D) $P(A)P(B)$
(8)	Fisher's Ideal Index No is -------- between Laspeyre's and Paasche's Index Number : (A) G.M. (B) A.M. (C) H.M. (D) Median
(9)	Index Number for Base Year is : (A) 0 (B) 50 (C) 100 (D) Not Possible
(10)	First Moment about Origin is : (A) Zero (B) 1 (C) Variance (D) Mean
(11)	Standard Deviation of a set of data is 4 , then its variance is : (A) 16 (B) 04 (C) 02 (D) – 4
(12)	If $\beta_2 = 3$ *then Distribution is called* : (A) Leptokurtic (B) Platykurtic (C) Mesokurtic (D) Symmetrical
(13)	Most Central Value of an Arrayed Set of Data is called : (A) Mode (B) Median (C) A.M (D) G.M.
(14)	If D = x – 15 and $\Sigma D = 20$ *for 10 observations , then* $\bar{x}$ is : (A) 2 (B) 5 (C) – 13 (D) 17
(15)	$\sum(y-\bar{y})^2$ is ------- : (A) 0 (B) Least (C) 1 (D) Variance
(16)	In a table part of rows captions is called : (A) Box Head (B) Title (C) Stub (D) Body
(17)	Questionnaire is -------- source : (A) Primary (B) Secondary (C) Original (D) Local

Bahawalpur Board-2023

Roll No.	1022 - /0000	Inter (Part – I)	Session (2020 – 22) to (2022 – 24)
Statistics (Subjective)	**Inter (Ist – A – Exam 2023)**		Time 2 : 40 Hours Marks : 68

Note : It is compulsory to attempt any (8 – 8) Parts each from Q.No.2 and Q.No.3 while attempt any (6) Parts from Q.No.4. Attempt any (3) Questions from Part – II .Write same Question No. and its Part No. as given in the Question Paper.

(Part - I)

22 x 2 = 44

Q.No.2	(i)	Describe any two limitations of " Statistics ".	(ii)	Define Statistics in Singular Form .
	(iii)	Define Average.	(iv)	What are the types of Average ?
	(v)	Compute Lower Quartile i-e Q_1 from the given data : 4 , 1 , 3 , 7 , 5 , 9 , 2	(vi)	If $\Sigma(x-15)=5$, $\Sigma(x-18)=0$, $\Sigma(x-21)=-21$, what is the value of Mean ?
	(vii)	Define Geometric Mean.	(viii)	Define Index Number.
	(ix)	Define Weighted Index Number.	(x)	Define Laspeyre's Index Number.
	(xi)	Write down any two uses of Index Number.		
	(xii)	If $\Sigma p_n q_n = 460$, $\Sigma p_o q_n = 115$, find Paasche's Index Number.		
Q.No.3	(i)	Define Tabulation.	(ii)	What is Historigram ?
	(iii)	Differentiate between Absolute and Relative Dispersion.	(iv)	Define Semi – Inter Quartile Range and its Coefficient.
	(v)	If $Q_1 = 88.03$ and $Q_3 = 94.90$ find Coefficient of Q.D.	(vi)	What are types of Dispersion?
	(vii)	If $n = 15$, $\Sigma x = 480$, $\Sigma x^2 = 15735$, then find C.V.	(viii)	Define Mean Deviation.
	(ix)	Define Compound Event.	(x)	What are Equally Likely Events ?
	(xi)	What is Conditional Probability ?	(xii)	Define Mutually Exclusive Events.
Q.No.4	(i)	Define Bernoulli Trial.	(ii)	What is Binomial Experiment ?
	(iii)	If $n = 6$ and $q = 0.40$, then find Mean and Variance of Binomial Distribution.	(iv)	Write down two properties of Hypergeometric Experiment.
	(v)	Given that $N = 10$, $n = 4$ and $k = 7$ Then find E (x) and S.D.(x) for Hypergeometric Distribution.	(vi)	Give any two properties of Mathematical Expectation.
	(vii)	How Random Numbers are generated ?	(viii)	Define Probability Distribution.
	(ix)	If E (x) = 2 , then find E (3x + 5)		

L.K.No. 1022

Bahawalpur Board-2023

(Part – II)

3 x 8 = 24

Q.No.5 (a) A Variable " y " is determined from a variable " x " by the equation $y = 10 - 4x$, find ' y ' when $x = -3, -2, -1, 0, 1, 2, 3, 4, 5$ and show that $\bar{y} = 10 - 4\bar{x}$ (04)

(b) Find Mode from the following Data : (04)

Groups	0 – 5	5 – 10	10 – 15	15 – 20	20 – 25
f	04	07	10	06	04

Q.No.6 (a) Find the Coefficient of Variation from the following data : (04)

Class Interval	50 – 60	60 – 70	70 – 80	80 – 90	90 – 100
f	01	05	12	08	04

(b) First three Moments about X = 60 are 1, 4 and 10. Find the first three Moments about Mean and the Coefficient of Skewness. (04)

Q.No.7 (a) From the following Prices, construct Chain Indices using Geometric Mean as an Average : (04)

Years	Sugar	Wheat	Rice
2010	50	39	62
2011	53	41	65
2012	57	42	68
2013	70	48	76

(b) Three coins are Tossed. What is the probability of getting : (04)
(i) Exactly 2 Heads (ii) At most 2 Tails

Q.No.8 (a) Given the Probability Distribution of a r.v. ' x ' : (04)

x	02	04	06
P (x)	$\frac{2}{6}$	$\frac{2}{6}$	$\frac{2}{6}$

Find : (i) E (x) (ii) $E(x^2)$

(b) A Random Variable " X " has the following Probability Distribution : (04)

x	– 2	– 1	0	1	2	3
p (x)	0.1	K	0.2	2K	0.3	3K

Find : (i) K (ii) P (x < 2)

Q.No.9 (a) A fair coin is tossed four times. Find the Probability Distribution of Number of Heads. (04)

(b) Ten Vegetable cans, all of the same size have lost their labels. It is known that 5 contain tomatoes and 5 contain Corns. If 5 cans selected at random, what is the Probability that 3 contain tomatoes ? (04)

Bahawalpur Board-2019

Statistics	(C)	L.K.No. 1127	Paper Code No. 6185
Paper I	(Objective Type)	Inter -A- 2019	Session (2015 -17) to (2018 – 20)
Time :	20 Minutes	Inter (Part - I)	(New Pattern)
Marks :	17		

Note : Four possible choices A , B , C ,D to each question are given. Which choice is correct fill that circle in front of that Question No. Use Marker or Pen to fill the circles. Cutting or filling two or more circles will result in Zero Mark in that Question.

Q.No.1 (1)	Frequency is denoted by : (A) q (B) p (C) f (D) c.f.
(2)	Class Interval of the groups 40 – 44 , 45 – 49 , 50 – 54 , ------ is : (A) 4 (B) 40 (C) 5 (D) 44
(3)	The word " Statistic " comes from Latin Word : (A) Status (B) Statistik (C) Statista (D) Statistique
(4)	The mean of 10 Numbers is 9 , then sum of these numbers is : (A) 10 (B) 70 (C) 90 (D) 80
(5)	M.D. of the values 5 , 5 , 5 and 5 is : (A) 5 (B) 0 (C) 20 (D) None of these
(6)	H.M. cannot be computed if any value of x in the data is : (A) $x > 0$ (B) $x < 0$ (C) $x = 0$ (D) None of these
(7)	Sum of Deviations from Mean is : (A) -1 (B) 0 (C) +1 (D) None of these
(8)	For a set of 10 numbers, $\Sigma(x-\bar{x})^2 = 360$ then S.D. is : (A) 36 (B) 6 (C) 12 (D) 8
(9)	Base Year Weighted Index is : (A) Paasche's (B) Laspeyre's (C) Fisher's (D) Marshall - Edgeworth's
(10)	Link Relatives can be obtained dividing P_n by : (A) p_o (B) q_o (C) q_n (D) P_{n-1}
(11)	The Second Moment about Mean is : (A) Mean (B) Variance (C) S.D. (D) 0
(12)	If P (A U B) = P (A) + P (B) , then Events A and B are called : (A) Mutually Exclusive (B) Not Mutually Exclusive (C) Independent (D) None of these
(13)	$E(x-\mu)$ is equal to : (A) Zero (B) Mean Deviation (C) Variance (D) S.D.
(14)	Parameters of Hypergeometric Distribution are : (A) 2 (B) 3 (C) 1 (D) 4
(15)	${}^3P_2$ is equal to : (A) 3 (B) 5 (C) 6 (D) 1
(16)	The Binomial Distribution is negatively skewed if : (A) $P < \frac{1}{2}$ (B) $P = \frac{1}{2}$ (C) $P > \frac{1}{2}$ (D) $P = 1$
(17)	If x and y are two independent random variables , then E (xy) is equal to : (A) E (x) + E (y) (B) E(x) E(y) (C) E(x) – E(y) (D) None of these

Roll No.	1127 - 6000	Session (2015 -17) to (2018 - 20)	Inter (Part - I)
Statistics (Subjective)	Inter - A -2019	Time 2 : 40 Hours Marks : 68	(New Pattern)

Note : It is compulsory to attempt any (8 – 8) Parts each from Q.No.2 and Q.No.3 while attempt any (6) Parts from Q.No.4. Attempt any (3) Questions from Section – II .Write same Question No. and its Part No. as given in the Question Paper.

Section - I

22 x 2 = 44

Q.No.2	(i)	Give the name of two methods for collecting Secondary Data.		
	(ii)	Why are Averages called Measures of Central Tendency?		
	(iii)	Define Population with examples.	(iv)	Write down the name of Averages.
	(v)	Write down two desirable properties of good average.	(vi)	If Laspeyre's Index = 140, Paasche's Index = 150 then find Fisher Index
	(vii)	Explain the term Mode.	(viii)	If $\Sigma Wx = 320$ and $\Sigma W = 40$ find $\bar{X}w$
	(ix)	Define Quantity Index Numbers.	(x)	Define Weighted Index Numbers.
	(xi)	Explain Link Relatives.	(xii)	Write down any formula of CPI
Q.No.3	(i)	Define Classification.	(ii)	Define Histogram.
	(iii)	State Addition Law of Probability for Mutually Exclusive Events.	(iv)	Calculate Range for Data : 13 , 3 , 7 , 15 , 17 , 5 , 23 , 27
	(v)	Define Mean Deviation.	(vi)	Give two properties of Standard Deviation.
	(vii)	What are Moments?	(viii)	What is Kurtosis?
	(ix)	What is Probability?	(x)	What is Trial?
	(xi)	What is Conditional Probability?	(xii)	What are types of Dispersion?
Q.No.4	(i)	What is a Random Experiment?	(ii)	Define Discrete Random Variable.
	(iii)	Define Mathematical Expectation.	(iv)	If $E(x) = 1.1$, $E(x^2) = 2.1$ find $Var(x)$?
	(v)	If $E(x) = 1.1$, find $E(3x+5)$?	(vi)	If $n = 4$, $p = \frac{1}{2}$ find $P(x=3)$?
	(vii)	Define Bernoulli Trials.	(viii)	What is Hypergeometric Experiment ?
	(ix)	How many and what are the parameters of Hypergeometric Distribution ?		

Section - II

Q.No.5 (a) Calculate H.M. for the following Frequency Distribution. (04)

Heights (Inches)	60 – 62	63 – 65	66 – 68	69 – 71	72 – 74
Frequency	05	18	42	27	08

(b) Using the basic definition, compute G.M. for the following values : 0.5 , 1.0 , 2.7 , 3.48 , 4.71 (04)

Q.No.6 (a) Given the Data on Income. (04)

x	1 – 10	11 – 20	21 – 30	31 – 40
f	13	10	5	2

Find Mean Deviation and Coefficient of Mean Deviation.

(b) Find Quartile Deviation and Coefficient of Quartile Deviation for data given in Q.No.6 (a) (04)

Q.No.7 (a) Compute Fisher Price Index Number for the year 2016 taking year 2015 as base. (04)

Commodity	Prices		Quantities	
	2015	2016	2015	2016
A	14	20	100	150
B	10	15	150	180
C	12	10	200	300

(b) A digit is selected at random from first 10 natural numbers. Find the Probability that selected digit is : (i) Even Number (ii) Greater than 5 (04)

Q.No.8 (a) The Probability Distribution of a Discrete Random Variable x is given by : (04)

$$f(x) = \binom{3}{x}\left(\frac{1}{4}\right)^x \left(\frac{3}{4}\right)^{3-x}$$ for $x = 0, 1, 2, 3$ find $E(x)$ and $E(x^2)$

(b) A Continuous Random Variable has the probability function $f(x) = Cx$ for $0 < x < 2$ Find the value of C. Also find $P(1 < x < 1.5)$ (04)

Q.No.9 (a) Assuming that each baby has Probability 0.35 of being male. Find the probability that a family of 5 children will have : (i) At most one boy (ii) At most one girl (04)

(b) A Random Variable " x " follows Hypergeometric Distribution having n = 5 , N = 12 and K = 3 then find : (i) $P(x \leq 1)$ (ii) $P(x > 1)$ (04)

Statistics | A | L.K.No. 827 | Paper Code No. 6181

Paper I (Objective Type) | Inter-A-2018 | New Pattern

Time Allowed : 20 Minutes | Inter (Part - I)

Maximum Marks : 17 | Session (2015 - 17) to (2017 - 19)

Note : Four possible choices A, B, C, D to each question are given. Which choice is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

Q.No.1 (1)	In the Plural Sense, Statistics means : (A) Methods (B) Numerical Data (C) Sample Values (D) Average Value
(2)	Sum of Relative Frequencies is always : (A) Zero (B) Less than one (C) Greater than one (D) One
(3)	An Ogive is a : (A) Frequency Curve (B) Frequency Polygon (C) Cumulative Frequency Polygon (D) Histogram
(4)	The Arithmetic Mean of 2, 4, 6 is : (A) 2 (B) 4 (C) 6 (D) 12
(5)	The most suitable average for qualitative data is : (A) Weighted Mean (B) Harmonic Mean (C) Mode (D) Geometric Mean
(6)	If any value in the data is zero, it is impossible to calculate : (A) Mean (B) Median (C) Mode (D) Harmonic Mean
(7)	The Range of Values 2, 4, 6, 8, 10 is : (A) 2 (B) 4 (C) 6 (D) 8
(8)	If a constant is added to all the values, then Variance : (A) Remains the same (B) Increase by the constant (C) Decrease by the constant (D) Zero
(9)	If Mean = 140, Mode = 145 then distribution is : (A) Symmetrical (B) Positively Skewed (C) Negatively Skewed (D) None of these
(10)	Base Year Weighted Index is : (A) Laspeyre's (B) Paasche's (C) Fisher (D) Marshall Edgeworth
(11)	Price Relative is a percentage ratio of Current Year Price and : (A) Base Year Price (B) Previous Year Price (C) Next Year Price (D) All these
(12)	A set of all possible outcomes of a Random Experiment is called : (A) Null Set (B) Sample Space (C) Simple Event (D) Random Variable
(13)	If $P(A \cup B) = P(A) + P(B)$ then Events A and B are called : (A) Mutually Exclusive (B) Not Mutually Exclusive (C) Independent (D) None of these
(14)	A Discrete Probability Distribution may be represented by : (A) A Table (B) A Graph (C) A Mathematical Equation (D) All of these
(15)	If "c" is non-random variable, then $E(c)$ is : (A) C (B) Zero (C) One (D) x
(16)	The Variance of Binomial Distribution is : (A) np (B) nq (C) npq (D) $(npq)^2$
(17)	In Hypergeometric Experiment, the trials are : (A) Independent (B) Dependent (C) Both A and B (D) Undefined

Roll No.	827 - 7000	New Pattern
Statistics (Subjective)	Inter-A-2018	Inter (Part - I)
Time = 2:40 Hours	Total Marks : 68	Session (2015 - 17) to (2017 - 19)

Note : It is compulsory to attempt (8 - 8) parts each from Q.No.2 and Q.No. 3 while attempt any (6) parts from Q. No.4 and attempt any (03) questions from Part II. Write same Question No. and its Part No. as given in the question paper.

Section - I

Bahawalpur Board-2018 — 22 x 2 = 44

Q.No.2(i)	Define Population and Sample.	(ii)	Define and Explain Average.
(iii)	Give two Merits of Geometric Mean.	(iv)	Mean and Median of a Frequency Distribution are 45 and 30 respectively. Find Mode.
(v)	Compute Geometric Mean for x = 3, 8, 0, 6	(vi)	Find Σx if $\bar{x} = 5$ and $n = 10$
(vii)	Define Simple Index Number.	(viii)	What are methods of Selecting Base Period?
(ix)	Define Consumer Price Index Number.	(x)	What are the types of Composite Index Number?
(xi)	If $\Sigma p_0 q_0 = 35310$, $\Sigma p_n q_0 = 41140$. Compute Base Year Weighted Price Index.	(xii)	Expand the following summation signs : (a) $\sum_{i=1}^{3} y_i^2$ (b) $\sum_{i=1}^{2} (y_i - \mu)$
Q.No.3(i)	Define the term Tabulation.	(ii)	Explain the Multiple Bar Chart.
(iii)	Explain the Absolute Measure of Dispersion.	(iv)	Define Standard Deviation.
(v)	Explain the Skewness.	(vi)	Find the Probability of getting sum is Seven when two dice are thrown.
(vii)	In a Symmetrical Distribution $Q_1 = 140$ and Median = 150. Find Quartile Deviation.	(viii)	The first two Moments of a Distribution about zero are 9 and 82. Find Coefficient of Skewness if Mode is 10.
(ix)	Define Collectively Exhaustive Events.	(x)	Distinguish between Simple and Compound Events.
(xi)	Write down the basic properties of Probability.	(xii)	If $P(A) = 1/3$, $P(\bar{B}) = 1/4$, $P(A \cup B) = 11/12$ find $P(A \cap B)$.
Q.No.4(i)	Define a Random Variable.	(ii)	What is Probability Mass Function?
(iii)	Check whether the following function is a Probability Distribution or not, Why? $f(y) = 1/4$ for $y = 1, 2, 3, 4, 5$	(iv)	Define Distribution Function of a r.v.
(v)	Define Binomial Experiment.	(vi)	Define Hypergeometric Probability Distribution.
(vii)	Given $n = 3$, $K = 4$ and $N = 6$ find $P(x = 2)$	(viii)	In a Binomial Distribution $n = 20$, $P = 3/5$ find its Mean and S.D.
(ix)	Given a r.v. x with $E(x) = 6$ and $Var(x) = 23$, find $E(x^2)$.		

Section - II

Q.N.5 (a) Calculate Arithmatic Mean from the following Frequency Distribution : (4)

Groups	Frequency
10 -- 19	10
20 -- 29	13
30 -- 39	29
40 -- 49	24
50 -- 59	18
60 -- 69	06

(b) Compute Lower and Upper Quartiles from the data given below :
30, 26, 18, 34, 22, 15, 39, 45, 16, 36 (4)

Q.No6 (a) What you say about the Skewness of the following :

(i) Mean = 67.45, Mode = 67.35, S = 2.92

(ii) $Q_1 = 136.62$, $Q_3 = 153.13$, Median = 146 (4)

(b) Find Mean Deviation for the Data given below :

Classes	20 -- 40	40 -- 60	60 -- 80	80 -- 100
Frequency	18	22	40	30

(4)

P.T.O.

Q.No.7 (a) Compute Index Number of Prices from the following Data taking 1981 as Base and using Median as an Average.

Prices

Years	A	B	C
1981	18	85	52
1982	22	76	60
1983	28	80	66
1984	31	95	80

(4)

(b) An Integer is chosen at Random from the first 100 Positive Integers. Find the Probability that the chosen digit is :

(i) Multiple of 10 (ii) Divisible by 8 (4)

Q.No.8 (a) A Random Variable x has following Probability Distribution.

x	1	2	3	4	5
P(x)	K	2K	4K	3K	2K

(i) Find value of K.

(ii) Find $P(x \geq 3)$. (4)

(b) A continuous Random Variable x has density function

$f(x) = 2x$ when $0 \leq x \leq 1$

$= 0$ else where (4)

Find $P(x = 1 \cdot 3)$ and $P(0 \cdot 5 \leq x \leq 1)$

Q.No.9 (a) Four Dice are tossed and number of sixes in each throw is recorded. This is repeated 180 times. Write down theoretical frequencies of 0, 1, 2, 3, 4 sixes. (4)

(b) A Committee of Size 5 is to be selected at random from 3 women and 5 men. Find Probability Distribution of Number of Women in the Committee. (4)