



Statistics	(B)	L.K.No. 1022	Paper Code No. 6183
Paper I	(Objective Type)	Inter (1st - A - Exam - 2023)	
Time :	20 Minutes	Inter (Part - I)	Session (2020 - 22) to (2022 - 24)
Marks :	17		

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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	In Hypergeometric Distribution, successive trials are :
(1)	(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)	$E[x - E(x)]^2 = 49$, 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 $\sum D = 20$ 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

$y = \frac{\sum D}{n} = \frac{20}{10} = 2$





Roll No.	1022 - 10 000	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)

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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 $E(3x + 5)$			

P.T.O.

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)
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Q.No.7	(a)	From the following Prices, construct Chain Indices using Geometric Mean as an Average :	(04)
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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 : (i) Exactly 2 Heads (ii) At most 2 Tails	(04)
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Q.No.8	(a)	Given the Probability Distribution of a r.v. ' x ' :	(04)
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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)
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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)
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	(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)
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