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BOARD OF INTERMEDIATE AND SECONDARY EDUCATION, MULTAN.
OBJECTIVE KEY FOR INTERMEDIATE 2nd ANNUAL EXAMINATION, 2024

Name of Subject: Statistics Part-I Group:

Q. Nos	Paper Code 2181	Correct Answer	Paper Code 2183	Correct Answer	Paper Code 2185	Correct Answer	Paper Code 2187	Correct Answer
1	C	Sample	B	Circle	B	Current year weighted	A	Zero
2	D	Methods	C	200	D	4	C	$P = \frac{1}{2}$
3	A	Frequency distribution	D	$\Sigma(X-25)^2$	C	$P(A \cap B) = 0$	A	3
4	B	Circle	A	Zero	A	7	C	Sample
5	C	200	D	20	B	30	D	Methods
6	D	$\Sigma(X-25)^2$	C	Normal	A	Zero	A	Frequency distribution
7	A	Zero	B	Current year weighted	C	$P = \frac{1}{2}$	B	Circle
8	D	20	D	4	A	3	C	200
9	C	Normal	C	$P(A \cap B) = 0$	C	Sample	D	$\Sigma(X-25)^2$
10	B	Current year weighted	A	7	D	Methods	A	Zero
11	D	4	B	30	A	Frequency distribution	D	20
12	C	$P(A \cap B) = 0$	A	Zero	B	Circle	C	Normal
13	A	7	C	$P = \frac{1}{2}$	C	200	B	Current year weighted
14	B	30	A	3	D	$\Sigma(X-25)^2$	D	4
15	A	Zero	C	Sample	A	Zero	C	$P(A \cap B) = 0$
16	C	$P = \frac{1}{2}$	D	Methods	D	20	A	7
17	A	3	A	Frequency distribution	C	Normal	B	30
18	/	/	/	/	/	/	/	/
19	/	/	/	/	/	/	/	/
20	/	/	/	/	/	/	/	/
Cross Check	A B C D		A B C D		A B C D		A B C D	
Total	5354		5354		5354		5354	

سرٹیفکیٹ بابت تصحیح سوالیہ پرچہ / مارکنگ Key

ہم نے مضمون صیغہ ریاضی پرچہ 2 گروپ انٹرمیڈیٹ دوسرا سالانہ امتحان 2024 کا سوالیہ پرچہ انشائیہ و معروضی (Subjective & Objective) کو بنظر عین چیک کر لیا ہے یہ پرچہ Syllabus کے عین مطابق Set کیا گیا ہے۔ اس سوالیہ پرچہ میں کسی قسم کی کوئی غلطی نہ ہے۔ ہم نے سوالیہ پرچہ کا اردو اور انگریزی Version بھی چیک کر لیا ہے۔ یہ Version آپس میں مطابقت رکھتے ہیں۔ نیز اس پرچہ کی معروضی (MCQs) Key کی بابت تصدیق کی جاتی ہے کہ اس میں بھی کسی قسم کی کوئی غلطی نہ ہے۔ مزید یہ کہ ہم نے Key بنانے سے متعلق دفتر کی جانب سے تیار کردہ ہدایات وصول کر کے ان کا بغور مطالعہ کر لیا ہے اور ان کی روشنی میں Key بنائی ہے۔ نیز سب ایگزامینرز کیلئے تفصیلی مارکنگ ہدایات / مارکنگ سکیم / Rubrics بھی تیار کر دی گئی ہیں۔

Dated: 07/11/2024

Prepared & Checked By:

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Paper Code Number: 2181		2024 (2 nd -A) INTERMEDIATE PART-I (11 th Class)		Roll No: _____	
STATISTICS PAPER-I					
TIME ALLOWED: 20 Minutes		OBJECTIVE		MAXIMUM MARKS: 17	
Q.No.1	You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that bubble in front of that question number, on bubble sheet. Use marker or pen to fill the bubbles. Cutting or filling two or more bubbles will result in zero mark in that question.				
S.#	QUESTIONS	A	B	C	D
1	A part of the population selected for study is called a:	Variable	Data	Sample	Parameter
2	In singular sense, statistics means:	Population data	Numerical data	Sample data	Methods
3	Histogram is a graph of:	Frequency distribution	Time series	Qualitative data	Ogive
4	A Pie diagram is represented by a:	Rectangle	Circle	Triangle	Square
5	If the arithmetic mean of 20 values is 10, then sum of these 20 values is:	10	20	200	300
6	If $\bar{X} = 25$, which of the given will be minimum?	$\Sigma(X - 27)^2$	$\Sigma(X + 27)^2$	$\Sigma(X + 25)^2$	$\Sigma(X - 25)^2$
7	The standard deviation of $-5, -5, -5, -5$ is:	Zero	-5	$+5$	-25
8	The range of the values $-5, -8, -10, 0, 6, 10$ is:	0	10	-10	20
9	In fixed base method, the base period should be:	Faraway	Abnormal	Normal	Unreliable
10	Paasche's price index number is also called:	Base year weighted	Current year weighted	Cost of living index	Price relative
11	When two coins are tossed, the possible outcomes are:	2	6	1	4
12	If A and B are two mutually exclusive events then:	$P(A \cap B) = 1$	$P(A \cup B) = 0$	$P(A \cap B) = 0$	$P(A \cap B) = S$
13	Given $E(x) = 5$ and $E(y) = -2$ then $E(x - y)$ is:	7	5	3	-2
14	If $Var(x) = 5$ and $Var(y) = 10$ then $Var(2x + y)$ is:	15	30	20	10
15	If $n = 6$ and $P = 0.9$ then $P(x = 7)$ is:	Zero	Less than zero	6	0.9
16	The binomial distribution is symmetrical when:	$P < \frac{1}{2}$	$P > \frac{1}{2}$	$P = \frac{1}{2}$	$P = 1$
17	The hypergeometric distribution has parameters:	3	4	2	1

Paper Code Number: 2183		2024 (2 nd -A) INTERMEDIATE PART-I (11 th Class)		Roll No: _____	
STATISTICS PAPER-I					
TIME ALLOWED: 20 Minutes		OBJECTIVE		MAXIMUM MARKS: 17	
Q.No.1	You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that bubble in front of that question number, on bubble sheet. Use marker or pen to fill the bubbles. Cutting or filling two or more bubbles will result in zero mark in that question.				
S.#	QUESTIONS	A	B	C	D
1	A Pie diagram is represented by a:	Rectangle	Circle	Triangle	Square
2	If the arithmetic mean of 20 values is 10, then sum of these 20 values is:	10	20	200	300
3	If $\bar{X} = 25$, which of the given will be minimum?	$\Sigma(X - 27)^2$	$\Sigma(X + 27)^2$	$\Sigma(X + 25)^2$	$\Sigma(X - 25)^2$
4	The standard deviation of $-5, -5, -5, -5$ is:	Zero	-5	$+5$	-25
5	The range of the values $-5, -8, -10, 0, 6, 10$ is:	0	10	-10	20
6	In fixed base method, the base period should be:	Faraway	Abnormal	Normal	Unreliable
7	Paasche's price index number is also called:	Base year weighted	Current year weighted	Cost of living index	Price relative
8	When two coins are tossed, the possible outcomes are:	2	6	1	4
9	If A and B are two mutually exclusive events then:	$P(A \cap B) = 1$	$P(A \cup B) = 0$	$P(A \cap B) = 0$	$P(A \cap B) = S$
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11	If $Var(x) = 5$ and $Var(y) = 10$ then $Var(2x + y)$ is:	15	30	20	10
12	If $n = 6$ and $P = 0.9$ then $P(x = 7)$ is:	Zero	Less than zero	6	0.9
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14	The hypergeometric distribution has parameters:	3	4	2	1
15	A part of the population selected for study is called a:	Variable	Data	Sample	Parameter
16	In singular sense, statistics means:	Population data	Numerical data	Sample data	Methods
17	Histogram is a graph of:	Frequency distribution	Time series	Qualitative data	Ogive

Paper Code Number: 2185		2024 (2 nd -A) INTERMEDIATE PART-I (11 th Class)		Roll No:	
STATISTICS PAPER-I					
TIME ALLOWED: 20 Minutes			OBJECTIVE	MAXIMUM MARKS: 17	
Q.No.1	You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that bubble in front of that question number, on bubble sheet. Use marker or pen to fill the bubbles. Cutting or filling two or more bubbles will result in zero mark in that question.				
S.#	QUESTIONS	A	B	C	D
1	Paasche's price index number is also called:	Base year weighted	Current year weighted	Cost of living index	Price relative
2	When two coins are tossed, the possible outcomes are:	2	6	1	4
3	If A and B are two mutually exclusive events then:	$P(A \cap B) = 1$	$P(A \cup B) = 0$	$P(A \cap B) = 0$	$P(A \cap B) = S$
4	Given $E(x) = 5$ and $E(y) = -2$ then $E(x - y)$ is:	7	5	3	-2
5	If $Var(x) = 5$ and $Var(y) = 10$ then $Var(2x + y)$ is:	15	30	20	10
6	If $n = 6$ and $P = 0.9$ then $P(x = 7)$ is:	Zero	Less than zero	6	0.9
7	The binomial distribution is symmetrical when:	$P < \frac{1}{2}$	$P > \frac{1}{2}$	$P = \frac{1}{2}$	$P = 1$
8	The hypergeometric distribution has parameters:	3	4	2	1
9	A part of the population selected for study is called a:	Variable	Data	Sample	Parameter
10	In singular sense, statistics means:	Population data	Numerical data	Sample data	Methods
11	Histogram is a graph of:	Frequency distribution	Time series	Qualitative data	Ogive
12	A Pie diagram is represented by a:	Rectangle	Circle	Triangle	Square
13	If the arithmetic mean of 20 values is 10, then sum of these 20 values is:	10	20	200	300
14	If $\bar{X} = 25$, which of the given will be minimum?	$\Sigma(X - 27)^2$	$\Sigma(X + 27)^2$	$\Sigma(X + 25)^2$	$\Sigma(X - 25)^2$
15	The standard deviation of $-5, -5, -5, -5$ is:	Zero	-5	+ 5	-25
16	The range of the values $-5, -8, -10, 0, 6, 10$ is:	0	10	-10	20
17	In fixed base method, the base period should be:	Faraway	Abnormal	Normal	Unreliable

Paper Code Number: 2187		2024 (2 nd -A) INTERMEDIATE PART-I (11 th Class)		Roll No: _____	
STATISTICS PAPER-I					
TIME ALLOWED: 20 Minutes		OBJECTIVE		MAXIMUM MARKS: 17	
Q.No.1	You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that bubble in front of that question number, on bubble sheet. Use marker or pen to fill the bubbles. Cutting or filling two or more bubbles will result in zero mark in that question.				
S.#	QUESTIONS	A	B	C	D
1	If $n = 6$ and $P = 0.9$ then $P(x = 7)$ is:	Zero	Less than zero	6	0.9
2	The binomial distribution is symmetrical when:	$P < \frac{1}{2}$	$P > \frac{1}{2}$	$P = \frac{1}{2}$	$P = 1$
3	The hypergeometric distribution has parameters:	3	4	2	1
4	A part of the population selected for study is called a:	Variable	Data	Sample	Parameter
5	In singular sense, statistics means:	Population data	Numerical data	Sample data	Methods
6	Histogram is a graph of:	Frequency distribution	Time series	Qualitative data	Ogive
7	A Pie diagram is represented by a:	Rectangle	Circle	Triangle	Square
8	If the arithmetic mean of 20 values is 10, then sum of these 20 values is:	10	20	200	300
9	If $\bar{X} = 25$, which of the given will be minimum?	$\sum(X - 27)^2$	$\sum(X + 27)^2$	$\sum(X + 25)^2$	$\sum(X - 25)^2$
10	The standard deviation of $-5, -5, -5, -5$ is:	Zero	-5	$+5$	-25
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12	In fixed base method, the base period should be:	Faraway	Abnormal	Normal	Unreliable
13	Paasche's price index number is also called:	Base year weighted	Current year weighted	Cost of living index	Price relative
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15	If A and B are two mutually exclusive events then:	$P(A \cap B) = 1$	$P(A \cup B) = 0$	$P(A \cap B) = 0$	$P(A \cap B) = S$
16	Given $E(x) = 5$ and $E(y) = -2$ then $E(x - y)$ is:	7	5	3	-2
17	If $Var(x) = 5$ and $Var(y) = 10$ then $Var(2x + y)$ is:	15	30	20	10

INTERMEDIATE PART-I (11 th Class)				2024 (2 nd -A)		Roll No: _____		
STATISTICS PAPER-I								
TIME ALLOWED: 2.40 Hours				SUBJECTIVE		MAXIMUM MARKS: 68		
NOTE: Write same question number and its parts number on answer book, as given in the question paper.								
SECTION-I								
2. Attempt any eight parts.						8 × 2 = 16		
(i)	Define statistics in plural sense.							
(ii)	Differentiate between primary data and secondary data.							
(iii)	Distinguish between Discrete and Continuous variable.							
(iv)	If for 10 observations $\sum(X - 23) = -17$ find the value of Mean.							
(v)	Write down any two merits of Median.				(vi)	Define Weighted Arithmetic Mean.		
(vii)	In a distribution Mean is "50" and Median is "40" find Mode.							
(viii)	Narrate two properties of good average.				(ix)	Define Fisher Index Number.		
(x)	What is difference between Link relative and Price relative?							
(xi)	If $\sum P_n q_o = 460$, $\sum P_o q_o = 115$ compute Laspeyre's Index Number.							
(xii)	Define unweighted Index Number.							
3. Attempt any eight parts.						8 × 2 = 16		
(i)	Explain frequency polygon in your own words.				(ii)	What do you mean by skewed distribution?		
(iii)	Describe the size of class interval.				(iv)	Define the term variance with formula.		
(v)	What do you mean by dispersion?				(vi)	Explain leptokurtic distribution.		
(vii)	Given $n = 9$, mode = 7 and $\sum X - \text{mode} = 23$. Compute mode coefficient of dispersion.							
(viii)	Given that mean = 50, median = 48 and coefficient of skewness = 1. Find the value of variance.							
(ix)	Distinguish between the terms sample space and event.				(x)	Explain the concept of independent events.		
(xi)	If two fair coins are tossed, find the probability of getting no heads.							
(xii)	Suppose $P(A) = \frac{1}{4}$, $P(B) = \frac{1}{3}$ and $P(A \cup B) = \frac{1}{2}$. Determine $P(A \cap B)$							
4. Attempt any six parts.						6 × 2 = 12		
(i)	Define the Random Variable.							
(ii)	Describe the applications of Random numbers. (Any two)							
(iii)	If $E(X^2) = 1.6500$, $[E(X)]^2 = (0.55)^2$ Find $\text{Var.}(X) = ?$							
(iv)	Given $E(2X) = 11$ and $E(2X)^2 = 550$. Find $S.D(X) = ?$							
(v)	Enlist the properties of Binomial experiment.				(vi)	Define Bernoulli's trial.		
(vii)	Describe the properties of hypergeometric probability distribution.							
(viii)	If $n = 3$, $K = 6$, $N = 10$. Find variance of hypergeometric distribution.							
(ix)	If $n = 3$, $P = \frac{1}{6}$, $q = \frac{5}{6}$. Find the mean of Binomial distribution.							
SECTION-II								
NOTE: Attempt any three questions.						3 × 8 = 24		
5.(a)	Compute Median and Mode from the following data:							4
	Classes	0-2	2-4	4-6	6-8	8-10	10-12	
	f	8	87	190	88	22	8	
(b)	From a given frequency distribution, calculate Geometric mean:							4
	x	2	6	10	14	18	22	26
	f	2	5	7	8	7	4	1
6.(a)	From the information below:							4
	$\sum f = 40$, $\sum fX = 560$, $\sum fX^2 = 8560$, $\sum fX^3 = 141920$ Find the first three moments about mean.							
(b)	Find the Bowley's co-efficient of skewness from the data:							4
	Groups	6-10	11-15	16-20	21-25	16-30		
	f	13	14	22	16	15		
7.(a)	Given the prices of commodities, construct index numbers by using simple average of relatives method:							4
	Year	Commodities (Prices)						
		A	B	C				
	2010	81	15	106				
	2011	72	18	109				
	2012	92	19	121				
(b)	Two dice are thrown together. Find the probability that sum of the data appeared on upper sides of dice is 8.							4
8.(a)	Given the following discrete probability distribution:							4
	X	0	1	2	3	4	5	Compute the mean and standard deviation.
	$P(x)$	$\frac{6}{36}$	$\frac{10}{36}$	$\frac{8}{36}$	$\frac{6}{36}$	$\frac{4}{36}$	$\frac{2}{36}$	
(b)	Given that $E(X^2) = 400$, $S.D(X) = 12$. Find $E(X) = ?$							4
9.(a)	A fair coin is tossed 5 times. What is the probability of getting?							4
	(i) at least 3 heads		(ii) at most two heads					
(b)	A committee of size 5 is to be selected at random from 3 women and 5 men.							4
	Find the expected number of women on the committee.							