

BOARD OF INTERMEDIATE AND SECONDARY EDUCATION, MULTAN.
OBJECTIVE KEY FOR INTERMEDIATE 2nd ANNUAL EXAMINATION, 2025

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	A	Raw data	D	8	B	Median	B	zero								
2	C	Discrete variable	B	Increasing	D	P_{75}	C	$\frac{P_n}{P_{n-1}} \times 100$								
3	A	class frequency	A	0 to n	C	zero	B	118.8								
4	D	4	C	$\frac{nK}{N}$	A	$b_2 = 3$	D	Simple Event								
5	B	Median	A	Raw data	B	zero	A	1								
6	D	P_{75}	C	Discrete variable	C	$\frac{P_n}{P_{n-1}} \times 100$	D	8								
7	C	zero	A	class frequency	B	118.8	B	Increasing								
8	A	$b_2 = 3$	D	4	D	Simple Event	A	0 to n								
9	B	zero	B	Median	A	1	C	$\frac{nK}{N}$								
10	C	$\frac{P_n}{P_{n-1}} \times 100$	D	P_{75}	D	8	A	Raw data								
11	B	118.8	C	zero	B	increasing	C	Discrete variable								
12	D	Simple Event	A	$b_2 = 3$	A	0 to n	A	class frequency								
13	A	1	B	zero	C	$\frac{nK}{N}$	D	4								
14	D	8	C	$\frac{P_n}{P_{n-1}} \times 100$	A	Raw data	B	Median								
15	B	Increasing	B	118.8	C	Discrete variable	D	P_{75}								
16	A	0 to n	D	Simple Event	A	class frequency	C	zero								
17	C	$\frac{nK}{N}$	A	1	D	4	A	$b_2 = 3$								
18																
19																
20																
Cross Check	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
Total	5	4	4	4	5	4	4	4	5	4	4	4	5	4	4	4

مرتب شد بابت تصحیح سوالیہ پرچہ امارنگ

ہم نے مضمون Statistics پرچہ II گروپ --- انٹر میڈیٹ دوسرا سہ ماہی امتحان 2025 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۔

Prepared & Checked By:

Dated:

S.#	Name	Designation	Institution	Mobile No	Signature
1	Muhammad Arsalan	Assoc. Prof.	Govt. Graduate College 9 Seha	0300-6162104	
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3	M. Irfan Umar	SSS	Govt. Lab. Model HSS, Besan Road, Multan	0300-6346983	
4					
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Re-Checked By ہم نے درج بالا سوالیہ پرچہ (انشائیہ + معروضی) "Key" اور ہدایات کے حوالہ سے مکمل طور پر تلی کر لی ہے۔ کسی قسم کی کوئی غلطی نہ ہے۔

1	Dr. Muhammad Kashif	Assist. Prof.	Govt. Graduate College Civil Lines, Multan	0300-7328109	
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19-11-2025 تاریخ

INTERMEDIATE PART-I (11 th Class)		2025 (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)	Explain continuous variable with an example.																
(ii)	Given $X_1 = 3, X_2 = 6, X_3 = -4$, find $\sum_{i=1}^3 (X_i - a)$, when $a = 2$																
(iii)	Define geometric mean and write its formula.	(iv)	State the empirical relationship between mean, median and mode.														
(v)	If Average of five values is 70, then find sum of values.																
(vi)	Given $l = 60, h = 10, f = 20, n = 80$ and $c = 30$ find median.																
(vii)	Write down the demerits of harmonic mean.	(viii)	Explain the term "Quartiles".														
(ix)	Define price relative and how it is calculated.	(x)	Give any two uses of index numbers.														
(xi)	If link relatives are 100, 108, 118 and 125 then find chain indices.																
(xii)	Given $\sum p_n q_n = 460$ and $\sum p_o q_n = 125$ find appropriate weighted index number.																
3. Attempt any eight parts.			8 × 2 = 16														
(i)	What is the difference between graph and diagram?																
(ii)	24 – 27, 28 – 30, 31 – 33, calculate class boundaries.	(iii)	Define the range and coefficient of range.														
(iv)	Write down any two properties of variance.	(v)	Explain the term relative dispersion.														
(vi)	Find mean deviation of the data $\sum f = 391, \sum fX = 21539.5, \sum f X - \bar{X} = 2395.61$																
(vii)	$n_1 = 50, n_2 = 40, s_1 = 9, s_2 = 6$ find S_c^2 .																
(viii)	Given that $n = 120, \sum fx = 396, \sum fx^2 = 1494$. Find standard deviation.																
(ix)	Define Complement Law of Probability.	(x)	State addition Law of Probability for Mutually Exclusive Events.														
(xi)	Suppose $P(A) = \frac{1}{4}, P(B) = \frac{1}{3}, P(A \cup B) = \frac{1}{2}$. Find $P(A \cap B)$																
(xii)	Given that $P(A) = \frac{3}{14}, P(B) = \frac{1}{6}, P(A \cap B) = \frac{1}{14}$. Find $P\left(\frac{A}{B}\right)$																
4. Attempt any six parts.			6 × 2 = 12														
(i)	Define a random variable.	(ii)	Given $E(X) = 7, E(X^2) = 54.38$. Find $Var(X)$														
(iii)	What is meant by probability density function?	(iv)	Describe the properties of a discrete probability distribution.														
(v)	Given $f(x) = \frac{K}{x}, x = 1, 2, 3$. Find K	(vi)	Describe the binomial frequency distribution.														
(vii)	What is the mean and variance of the binomial distribution with parameters n and P ?																
(viii)	Is it possible to have a binomial distribution with mean = 5 and S.D = 3.7																
(ix)	Define a Hypergeometric probability distribution.																
SECTION-II																	
NOTE: Attempt any three questions.			3 × 8 = 24														
5.(a)	Find the A.M from the following data:																
	<table><tr><td>$U = \frac{X-30}{5}$</td><td>-2</td><td>-1</td><td>0</td><td>1</td><td>2</td><td>3</td></tr><tr><td>f</td><td>5</td><td>8</td><td>15</td><td>20</td><td>12</td><td>4</td></tr></table>			$U = \frac{X-30}{5}$	-2	-1	0	1	2	3	f	5	8	15	20	12	4
$U = \frac{X-30}{5}$	-2	-1	0	1	2	3											
f	5	8	15	20	12	4											
(b)	Find the value of upper quartile.																
	<table><tr><td>Marks</td><td>30 – 39</td><td>40 – 49</td><td>50 – 59</td><td>60 – 69</td><td>70 – 79</td></tr><tr><td>F</td><td>3</td><td>10</td><td>20</td><td>13</td><td>4</td></tr></table>			Marks	30 – 39	40 – 49	50 – 59	60 – 69	70 – 79	F	3	10	20	13	4		
Marks	30 – 39	40 – 49	50 – 59	60 – 69	70 – 79												
F	3	10	20	13	4												
6.(a)	Calculate variance from the following data:																
	<table><tr><td>y</td><td>525</td><td>500</td><td>475</td><td>450</td><td>425</td><td>400</td></tr><tr><td>f</td><td>24</td><td>35</td><td>46</td><td>41</td><td>34</td><td>22</td></tr></table>			y	525	500	475	450	425	400	f	24	35	46	41	34	22
y	525	500	475	450	425	400											
f	24	35	46	41	34	22											
(b)	The following sums have been obtained from a frequency distribution of a variable X after making substitution $X = 62 + 5U, \sum f = 120, \sum fU = 140, \sum fU^2 = 598$ compute C.V.																
7.(a)	Compute chain indices taking 1995 as base year for the following data:																
	<table><tr><td>Years</td><td>1995</td><td>1996</td><td>1997</td><td>1998</td><td>1999</td></tr><tr><td>Prices</td><td>116</td><td>120</td><td>137</td><td>151</td><td>169</td></tr></table>			Years	1995	1996	1997	1998	1999	Prices	116	120	137	151	169		
Years	1995	1996	1997	1998	1999												
Prices	116	120	137	151	169												
(b)	Show that the probability of more than 7 is equals to the probability of less than 7 when two dices are rolled.																
8.(a)	The probability distribution of a random variable " X " is given below:																
	<table><tr><td>X</td><td>0</td><td>1</td><td>2</td></tr><tr><td>$P(x)$</td><td>$\frac{3}{10}$</td><td>$\frac{6}{10}$</td><td>$\frac{1}{10}$</td></tr></table>			X	0	1	2	$P(x)$	$\frac{3}{10}$	$\frac{6}{10}$	$\frac{1}{10}$						
X	0	1	2														
$P(x)$	$\frac{3}{10}$	$\frac{6}{10}$	$\frac{1}{10}$														
	Show that $E(5X + 3) = 5E(X) + 3$																
(b)	A continuous random variable X have values between 2 and 8 with density function $a(x + 3)$																
	Calculate (a) The value of " a " (b) $P(x - 5 < 0.5)$																
9.(a)	An event has the probability $P = \frac{3}{5}$. Find complete binomial probability distribution for $n = 5$.																
(b)	If $N = 10, n = 6$ and $K = 4$ then find mean and variance of hypergeometric distribution by using formula.																

Paper Code Number: 2181		2025 (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	Primary data are same as:	Raw data	Secondary data	Grouped data	Arrayed data
2	A Quantitative Variable whose values are counted is called:	Attribute	Constant	Discrete variable	Continuous variable
3	The number of observations falling in a class is called:	Class frequency	Class mark	Class interval	Cumulative frequency
4	The arithmetic mean of 2, 4, 6 is:	2	6	12	4
5	The middle value of an ordered series is called:	Mean	Median	Q_1	Q_3
6	Upper quartile Q_3 is equal to:	$Q_2 - Q_1$	D_7	$\frac{Q_2 + Q_1}{2}$	P_{75}
7	The standard deviation of the data 5, 5, 5, 5 is:	5	10	Zero	25
8	In mesokurtic distribution the value of b_2 is:	$b_2 = 3$	$b_2 > 3$	$b_2 < 3$	$b_2 = \text{zero}$
9	The distribution is symmetrical then value of b_1 is:	Negative	Zero	3	1
10	The formula for link relative is:	$\frac{P_o}{P_n} \times 100$	$\frac{P_n}{P_o} \times 100$	$\frac{P_n}{P_{n-1}} \times 100$	$\frac{P_{n-1}}{P_n} \times 100$
11	If $\sum p_o q_o = 505$, $\sum p_o q_o = 425$ then Laspeyre's index is:	108.8	118.8	128.8	138.3
12	An event having only one sample point is called:	Composite event	Null event	Sure event	Simple event
13	The probability of sure event is always equal to:	1	0	-1	2
14	If $E(X) = 5$, $E(Y) = 3$ then $E(X + Y)$ is:	5	3	2	8
15	Distribution function is always:	Decreasing	Increasing	Zero	One
16	The range of Binomial distribution is:	0 to n	0 to ∞	$-\infty$ to ∞	0 to 1
17	Hypergeometric distribution has mean:	$\frac{K}{N}$	$\frac{nN}{K}$	$\frac{nK}{N}$	$\frac{N}{K}$

Paper Code Number: 2183		2025 (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 $E(X) = 5$, $E(Y) = 3$ then $E(X + Y)$ is:	5	3	2	8
2	Distribution function is always:	Decreasing	Increasing	Zero	One
3	The range of Binomial distribution is:	0 to n	0 to ∞	$-\infty$ to ∞	0 to 1
4	Hypergeometric distribution has mean:	$\frac{K}{N}$	$\frac{nN}{K}$	$\frac{nK}{N}$	$\frac{N}{K}$
5	Primary data are same as:	Raw data	Secondary data	Grouped data	Arrayed data
6	A Quantitative Variable whose values are counted is called:	Attribute	Constant	Discrete variable	Continuous variable
7	The number of observations falling in a class is called:	Class frequency	Class mark	Class interval	Cumulative frequency
8	The arithmetic mean of 2, 4, 6 is:	2	6	12	4
9	The middle value of an ordered series is called:	Mean	Median	Q_1	Q_3
10	Upper quartile Q_3 is equal to:	$Q_2 - Q_1$	D_7	$\frac{Q_2 + Q_1}{2}$	P_{75}
11	The standard deviation of the data 5, 5, 5, 5 is:	5	10	Zero	25
12	In mesokurtic distribution the value of b_2 is:	$b_2 = 3$	$b_2 > 3$	$b_2 < 3$	$b_2 = \text{zero}$
13	The distribution is symmetrical then value of b_1 is:	Negative	Zero	3	1
14	The formula for link relative is:	$\frac{P_n}{P_o} \times 100$	$\frac{P_o}{P_n} \times 100$	$\frac{P_n}{P_{n-1}} \times 100$	$\frac{P_{n-1}}{P_n} \times 100$
15	If $\sum p_n q_o = 505$, $\sum p_o q_n = 425$ then Laspeyre's index is:	108.8	118.8	128.8	138.3
16	An event having only one sample point is called:	Composite event	Null event	Sure event	Simple event
17	The probability of sure event is always equal to:	1	0	-1	2

Paper Code Number: 2185		2025 (2 nd -A) INTERMEDIATE PART-I (11 th Class)		Roll No: _____	
STATISTICS PAPER-I					
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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	The middle value of an ordered series is called:	Mean	Median	Q_1	Q_3
2	Upper quartile Q_3 is equal to:	$Q_2 - Q_1$	D_7	$\frac{Q_2 + Q_1}{2}$	P_{75}
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4	In mesokurtic distribution the value of b_2 is:	$b_2 = 3$	$b_2 > 3$	$b_2 < 3$	$b_2 = \text{zero}$
5	The distribution is symmetrical then value of n_1 is:	Negative	Zero	3	1
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7	If $\sum p_o q_o = 505$, $\sum p_o q_n = 425$ then Laspeyre's index is:	108.8	118.8	128.8	138.3
8	An event having only one sample point is called:	Composite event	Null event	Sure event	Simple event
9	The probability of sure event is always equal to:	1	0	-1	2
10	If $E(X) = 5$, $E(Y) = 3$ then $E(X - Y)$ is:	5	3	2	8
11	Distribution function is always:	Decreasing	Increasing	Zero	One
12	The range of Binomial distribution is:	0 to n	0 to ∞	$-\infty$ to ∞	0 to 1
13	Hypergeometric distribution has mean:	$\frac{K}{N}$	$\frac{nN}{K}$	$\frac{nK}{N}$	$\frac{N}{K}$
14	Primary data are same as:	Raw data	Secondary data	Grouped data	Arrayed data
15	A Quantitative Variable whose values are counted is called:	Attribute	Constant	Discrete variable	Continuous variable
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17	The arithmetic mean of 2, 4, 6 is:	2	6	12	4

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S.#	QUESTIONS	A	B	C	D
1	The distribution is symmetrical then value of b_1 is:	Negative	Zero	3	1
2	The formula for link relative is:	$\frac{P_n}{P_o} \times 100$	$\frac{P_o}{P_n} \times 100$	$\frac{P_n}{P_{n-1}} \times 100$	$\frac{P_{n-1}}{P_n} \times 100$
3	If $\sum p_1 q_1 = 505$, $\sum p_0 q_0 = 425$ then Laspeyre's index is:	108.8	118.8	128.8	138.3
4	An event having only one sample point is called:	Composite event	Null event	Sure event	Simple event
5	The probability of sure event is always equal to:	1	0	-1	2
6	If $E(X) = 5$, $E(Y) = 3$ then $E(X + Y)$ is:	5	3	2	8
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16	The standard deviation of the data 5, 5, 5, 5 is:	5	10	Zero	25
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