

INTERMEDIATE PART-I (11th CLASS)

STATISTICS PAPER-I

TIME ALLOWED: 2.40 Hours

MAXIMUM MARKS: 68

SUBJECTIVE

NOTE: Write same question number and its part number on answer book,
as given in the question paper.

SECTION-I

2. Attempt any eight parts.

 $8 \times 2 = 16$

- (i) Define population and sample.
- (ii) Define continuous variable.
- (iii) What is meant by average?
- (iv) Give a common advantage of median and mode.
- (v) For a certain distribution if $\sum(X - 15) = 5$, $\sum(X - 18) = 0$, $\sum(X - 211) = -21$, what is the value of A.M and why?
- (vi) Following are the heights(cms) of 5 students measured at the time of registration.
Find the Median of the data.
Yi: 88.03, 94.50, 94.90, 95.05, 84.60
- (vii) Define mode.
- (viii) What is general relationship between A.M, G.M and H.M.?
- (ix) Define an index number.
- (x) What is meant by a base period?
- (xi) Define a weighted index number.
- (xii) Write down the formula of Paasche's price index number.

3. Attempt any eight parts.

 $8 \times 2 = 16$

- (i) Define two way classification.
- (ii) What is "Title" of a table? Define.
- (iii) Define standard deviation.
- (iv) Let $\bar{X} = 10$, $S = 12$. Find co-efficient of variation.
- (v) Define co-efficient of variation.
- (vi) Write down formula of variance.
- (vii) Calculate range of 3, 5, 7, 9, 1.
- (viii) If $Y = 3X$, then find $\text{Var}(Y)$.
- (ix) Define sample space.
- (x) What is combination (nC_r)?
- (xi) Define dependent events.
- (xii) Calculate 5C_3 .

4. Attempt any six parts.

 $6 \times 2 = 12$

- (i) If $E(X) = 1.15$ and $E(X^2) = 2.15$ then find $\text{Var}(X)$.
- (ii) Give an example of a random variable.
- (iii) Given $x = 0, 1, 2$, $P(x) = 4c, 3c, c$ find the value of c .
- (iv) Write down two properties of expectation.
- (vi) State any two properties of binomial experiment.
- (v) Describe binomial frequency distribution.
- (vii) If $n = 10$, $p = 0.4$ find mean and variance of the binomial distribution.
- (viii) Write down the formula of the variance of hypergeometric distribution.
- (ix) Find the binomial distribution whose mean = 12 and standard deviation is 3.

SECTION-II**NOTE: Attempt any three questions.**

- 5.(a) Find the Harmonic mean and Arithmetic mean from the following reciprocals of 11 values of x : 4
 0.0500, 0.0454, 0.0400, 0.0333,
 0.0285, 0.0232, 0.0213, 0.02000,
 0.0182, 0.0151, 0.0143.

- (b) Find the geometric mean of 50, 67, 39, 40, 36, 60, 54, 43. 4

- 6.(a) Compute Mean Deviation about Mean from the following data: 4

Groups	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60
f	3	8	14	7	4

- (b) By multiplying each value, 3, 6, 1, 7, 2, 5 by 2 and then adding 5, we obtained the values: 11, 17, 7, 19, 9, 15. What is the relationship between standard deviations and means for the two sets of values. 4

- 7.(a) For the following data, find index numbers taking 4

(i) The year 1935 as base. (ii) Average of 1st 3 years as base

Years	1930	1931	1932	1933	1934	1935	1936	1937	1938
Prices	4	5	6	7	8	10	9	10	11

- (b) From a well-shuffled pack of 52 cards, a card is drawn at random. What is the probability that it is: 4

(i) A card of diamond (ii) A black card (iii) An ace (iv) A pictured card

- 8.(a) The probability distribution of a discrete random variable X is given by: 4

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

- (b) Given $P(x) = K, 2K, 3K, 4K$ for $x = 3, 4, 5, 6$. Determine the constant K and find $E(X)$ 4

- 9.(a) A box contains 5 red and 10 white balls. If 8 balls are chosen at random without replacement. Determine the probability that (i) 4 are red balls (ii) no red ball 4

- (b) A fair die is rolled 5 times and the number of sixes is counted. Find the probability of: 4
 (i) at least one six (ii) at most 3 sixes

STATISTICS PAPER-I

OBJECTIVETIME ALLOWED: 20 Minutes
MAXIMUM MARKS: 17

Note: 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. No credit will be awarded in case BUBBLES are not filled. Do not solve question on this sheet of OBJECTIVE PAPER.

Q.No.1

(1) Statistics deals with the facts which can be measured:

- ☒ (A) Numerically (B) Accurately (C) Precisely (D) Analytically

(2) The class mark is the value which divides a class into _____ equal parts.

- ☒ (A) Two (B) Three (C) Four (D) Five

(3) The arithmetic mean of two numbers "a" and "b" is:

- (A) $\frac{a+b}{n}$ ☒ (B) $\frac{a+b}{2}$ (C) $\frac{ab}{a+b}$ (D) $\frac{a+b}{ab}$

(4) The _____ divide the arranged set of data into two equal halves:

- (A) Mode (B) Mean ☒ (C) Median (D) H.M

(5) If Mean = 45, Median = 30 then mode is equal to:

- (A) 30 (B) 45 ☒ (C) Zero (D) 55

(6) Measure of dispersion has types:

- ☒ (A) Two (B) Three (C) Four (D) Five

(7) The variance of 7, 7, 7, 7, 7 is:

- (A) 7 (B) $(7)^2$ ☒ (C) Zero (D) -7

(8) Mean deviation is least if deviations are taken from:

- ☒ (A) Median (B) Mean (C) Mode (D) G.M

(9) Simple index number involves _____ commodity/commodities.

- ☒ (A) One (B) Two (C) Three (D) Four

(10) An index number is usually expressed in:

- ☒ (A) Percentage (B) Period (C) Number (D) None of these

(11) P(S) is equal to:

- (A) Zero ☒ (B) 1 (C) -1 (D) 2

(12) 6C_2 is equal to:

- (A) 5 (B) 10 ☒ (C) 15 (D) 20

(13) E(C) is equal to:

- (A) 1 (B) Zero (C) -1 ☒ (D) C

(14) If $x = 0, 1, 2$ and $P(x) = K, 2K, 3K$ then K is equal to:

- (A) $\frac{1}{4}$ ☒ (B) $\frac{1}{6}$ (C) $\frac{1}{8}$ (D) None of these

(15) Mean of binomial distribution is:

- ☒ (A) np (B) nq (C) pq (D) npq

(16) The parameters of the binomial distribution are:

- (A) n, q (B) p, q ☒ (C) n, p (D) n

(17) The hypergeometric distribution has parameters:

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- (10) Statistics deals with the facts which can be measured:
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- (11) ☒ The class mark is the value which divides a class into _____ equal parts.
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BOARD OF INTERMEDIATE AND SECONDARY EDUCATION, MULTAN.
OBJECTIVE KEY FOR INTERMEDIATE ANNUAL EXAMINATION, 2021

Name of Subject: Statistics Session: 2020-2021 - P1

Q.Nos	Paper Code 2181	Paper Code 2183	Paper Code 2185	Paper Code 2187
1	A	A	C	C
2	A	A	C	A
3	B	B	A	C
4	C	C	C	A
5	C	D	A	A
6	A	B	A	A
7	C	A	A	B
8	A	C	B	C
9	A	B	C	D
10	A	A	D	B
11	B	A	B	A
12	C	B	A	C
13	D	C	C	B
14	B	C	B	A
15	A	A	A	A
16	C	C	A	B
17	B	A	B	C
18				
19				
20				

سرٹیفکیٹ بابت تصحیح سوالیہ پرچہ / مارکنگ Key

ہم نے مضمون Statistics پرچہ I گروپ انٹرمیڈیٹ سالانہ امتحان 2021ء کا سوالیہ پرچہ انشائیہ و معروضی (Subjective & Objective) کو بنظر عین چیک کر لیا ہے یہ پرچہ ALP 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: 16-08-2021

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Re-Checked By ہم نے درج بالا سوالیہ پرچہ (انشائیہ + معروضی) معروضی "Key" اور ہدایات کے حوالہ سے مکمل طور پر تلی کر لی ہے۔ کسی قسم کی کوئی غلطی نہ ہے۔

1	AFTAB AHMAD ANSARI	Associate Prof.	Govt Graduate College Multan	03336057036	
2	Muhammad Zia	Assistant Prof.	Govt college Civil Lines Multan	03350805802	

تاریخ 17-08-2021