

INTERMEDIATE PART-II (12th CLASS) (SPECIAL EXAMINATION)**STATISTICS PAPER-II**

TIME ALLOWED: 2.40 Hours

SUBJECTIVE

MAXIMUM MARKS: 68

NOTE: Write same question number and its part number in answer book, as given in the question paper.**SECTION-I**

2. **Write short answers to any eight parts.** **8 × 2 = 16**
- Define normal distribution.
 - If $X \sim N(60, 25)$ then find Q.D.
 - In a normal distribution $\mu_4 = 243$ then find S.D.
 - What is the relationship between M.D and S.D?
 - What is the range of normal distribution?
 - Define Estimation.
 - What is an unbiased estimator?
 - What is meant by Statistical hypothesis?
 - Define Statistical inference.
 - What do you mean by "Level" of significance?
 - What are functions of a system software?
 - What do you understand by C.P.U.?
3. **Write short answers to any eight parts.** **8 × 2 = 16**
- Define Sample.
 - What do you understand by random sampling?
 - Write a note on sampling.
 - Find sampling error if $\bar{X} = 10$ and $\mu = 8$.
 - Write down two purposes of sampling.
 - If $N = 5$ and $n = 2$. How many samples can be drawn from sampling with replacement?
 - Write a note on regression.
 - Define Y – intercept 'a'.
 - Write down two normal equations of regression line $\hat{y} = a + bx$.
 - If $r = 0.6$ and $b_{yx} = 0.80$. Find b_{xy} .
 - Define regressor.
 - Define positive correlation.
4. **Write short answers to any six parts.** **6 × 2 = 12**
- Define Contingency table.
 - Given that $(A\beta) = 30$ and $(\alpha\beta) = 20$. Find β .
 - Define association of attributes.
 - For attributes A and B $(A) = 144$, $(B) = 384$, $(AB) = 54$ and $N = 1054$. Determine whether two attributes are independent or associated.
 - Define the term "Time Series".
 - Define secular trend.
 - Give two examples of seasonal movements.
 - What is Rank Correlation?
 - Differentiate between Signal and Noise.

SECTION-II**NOTE: Attempt any three questions.****3 × 8 = 24**

5.(a) In a normal distribution $\mu = 50$ and $\sigma = 10$. Find (i) $P(X > 70)$ (ii) $P(X < 65)$ 4

(b) In a normal distribution $\mu = 100$ and $\sigma = 5$. Find (i) P_{60} (ii) D_5 4

6.(a) In an infinite population $\mu = 50$ and $\sigma^2 = 250$ find mean and variance for the distribution of $\bar{X}$ if $n = 25$. 4

(b) Draw all possible samples of size 3 without replacement from population 2, 4, 5, 7, 10. Find the sample proportion ($\hat{p}$) of Prime numbers in each sample.

Verify that (i) $\mu_{\hat{p}} = p$ (ii) $\sigma_{\hat{p}}^2 = \frac{pq}{n} \cdot \left(\frac{N-n}{N-1} \right)$ 4

7.(a) In 40 tosses of a coin 24 heads were obtained. Find 95% confidence limits for the proportion of heads which would be obtained in an unlimited number of tosses of the coin. 4

(b) If $n_1 = 25$, $\bar{x}_1 = 16.7$, $\sigma_1 = 0.6$
 $n_2 = 36$, $\bar{x}_2 = 15.8$, $\sigma_2 = 0.3$

Test at 5% level of significance the hypothesis that there is no difference between two population means. 4

8.(a) Find correlation: r_{xy} if

(i) $n = 20$, $\bar{x} = 2$, $\bar{y} = 8$, $\sum x^2 = 180$, $\sum y^2 = 1424$ and $\sum xy = 404$

(ii) $S_x = 4$, $S_y = 18.75$ and $S_{xy} = 36$ 4

(b) Fit a least square regression line taking X as independent variable and show that $\sum e = \sum (y - \hat{y}) = 0$ for following set of data: 4

X	1	2	3	4
Y	0	2	3	6

9.(a) Test the association between two attributes A and B from the following data: 4

Attribute B	Attribute A	
	A_1	A_2
B_1	20	30
B_2	15	35

(b) Calculate 7 days moving average for the following data: 4

Week	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
I	24	50	30	48	54	55	62
II	28	52	41	42	50	41	42

STATISTICS PAPER-II

TIME ALLOWED: 20 Minutes

OBJECTIVE

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) In a normal distribution, the value of β_1 and β_2 are respectively:
☒ (A) 0 & 3 (B) 3 & 0 (C) 0 & 1 (D) 1 & 3
- (2) The normal curve is called:
 (A) Leptokurtic (B) Platykurtic ☒ (C) Mesokurtic (D) Skewed
- (3) The number of parameters in a normal distribution are:
 (A) Five ☒ (B) Two (C) Three (D) Four
- (4) A value calculated from the sample data is called:
 (A) Parameter ☒ (B) Statistic (C) Mean (D) Proportion
- (5) The possible samples in without replacement sampling are:
 (A) $N - n$ (B) $N + n$ ☒ (C) ${}^N C_n$ (D) N^n
- (6) Standard error of the mean is the standard deviation of the:
 (A) Population (B) Sample ☒ (C) Sampling distribution of means (D) None of these
- (7) If $E(\hat{\theta}) = \theta$, then $\hat{\theta}$ is:
 (A) Biased ☒ (B) Unbiased (C) Positively (D) None of these
- (8) Confidence coefficient or level of confidence is denoted by:
 (A) $1 - \beta$ ☒ (B) $1 - \alpha$ (C) α (D) β
- (9) Two tailed test is used if:
 (A) $H_1 : \mu < \mu_0$ (B) $H_1 : \mu > \mu_0$ ☒ (C) $H_1 : \mu \neq \mu_0$ (D) None of these
- (10) The sum of squares of residuals is denoted by:
 (A) e (B) $\sum e$ ☒ (C) $\sum e^2$ (D) $\frac{\sum e^2}{n}$
- (11) If $y = 10 - 2x$, then the slope of line is:
 (A) 10 (B) 2 ☒ (C) -2 (D) Unknown
- (12) If both regression coefficients are negative, then the correlation coefficients will be:
☒ (A) Negative (B) Positive (C) Zero (D) One
- (13) If two attributes A and B are independent, then the coefficient of association is:
 (A) -1 (B) +1 ☒ (C) 0 (D) 0.5
- (14) Chi-square curve ranges from:
 (A) $-\infty$ to $+\infty$ ☒ (B) 0 to ∞ (C) $-\infty$ to 0 (D) 0 to 1
- (15) The graph of a time series is called a:
 (A) Histogram (B) Trend line ☒ (C) Historigram (D) Scatter diagram
- (16) Fire in a factory is an example of:
 (A) Secular Trend (B) Cyclical Variation (C) Seasonal Variation ☒ (D) Irregular Variation
- (17) The most common input device/s is/are:
☒ (A) Keyboard and mouse (B) Software (C) Monitor (D) Printer

STATISTICS PAPER-II

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OBJECTIVE KEY FOR INTERMEDEAT SPECIAL PART-II EXAMINATION, 2020
 Name of Subject: Statistics Session: Special exam 2020

Q. Nos.	Paper Code 4181	Paper Code 4182	Paper Code 4185	Paper Code 4187
1	A	B	B	C
2	C	B	C	C
3	B	C	C	B
4	B	C	C	B
5	C	B	A	C
6	C	B	C	C
7	B	C	B	C
8	B	C	C	A
9	C	C	D	C
10	C	A	A	B
11	C	C	A	C
12	A	B	C	D
13	C	C	B	A
14	B	D	B	A
15	C	A	C	C
16	D	A	C	B
17	A	C	B	B
18	/	/	/	/
19	/	/	/	/
20	/	/	/	/

مرٹیکٹ بابت صحیح سوالیہ پرچہ / مارکنگ Key

ہم نے مضمون شماریات پرچہ B گروپ یکم انٹرمیڈیٹ ایشل امتحان 2020 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 اور Syllabus کے مطابق بھی ہیں۔ نیز اس پرچہ کی معروضی (MCQs) Key کی بابت بھی تصدیق کی جاتی ہے کہ اس میں بھی کسی قسم کی کوئی غلطی نہ ہے۔ MCQs کی "Key" کو دوبارہ بھی بغور چیک کر لیا گیا 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 ایگزیمینرز کیلئے تفصیلی ہدایات / مارکنگ سکیم / Rubrics بھی تیار کر دی گئی ہیں۔

Prepared & Checked By:

S.#	Name	Designation	Institution	Mobile No	Signature
1	Muhammad Azam Pervez	ASSISTANT PROF.	Govt. B. M. S. College Multan	0300 7330629	
2	Muhammad Zia	ASSISTANT PROFESSOR	Govt. College Civil Lines Multan	0335-0805802	
3	M. Irfan Umar	SSS	Govt. Lab. Model HSS Basan Road Multan	0300 6346983	

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

S.#	Name	Designation	Institution	Mobile No	Signature
1	AFT AB AHMAD ANSARI	Associate Professor	G. College of Science Multan	03336257036	
2					
3					