Student Roll No

Example Student Roll No

2	3	4	7	2	6

ہال میں موبائل فون لانا بالکل منع ہے

Paper Code: 29

MRD-XI-17 (A)

STATISTICS – (Part-I)

Total Time: 3hrs

Total Marks:75

Signature of Supdt.

FILL ROLL NO. COLUMN WISE FROM LEFT TO RIGHT ACCORDING TO EXAMPLE SHOWN ABOVE.

Time: 20min

"SECTION – A"

Marks: 15

NOTE: **Use Black/Blue marker for shading only one bubble for each question. No mark will be awarded for Cutting, erasing, overwriting, and multiple bubble shading.**

Q. 1 **Choose the correct option i.e. A,B,C, and D.**

i. Class boundaries of 2.05 --- 3.05 are .....A.....
Ⓐ 2.045 --- 3.055 Ⓑ 2.045 --- 3.045 Ⓒ 2.050 --- 3.050 Ⓓ 2.45 --- 3.55

ii. $\sum(X-A)=$ .....
Ⓐ $\sum X-\sum A$ Ⓑ $n\bar{X}-n\bar{A}$ Ⓒ $\bar{X}-A$ Ⓓ $\sum X-A$

iii. If G.M=60, A.M=110.2, then H.M = ...
Ⓐ 28 Ⓑ 38 Ⓒ 32.7 Ⓓ 25

iv. $Var(x-y)=$ .....
Ⓐ $V(x)-V(y)$ Ⓑ $V(x)+V(y)$ Ⓒ $V(x)\pm V(y)$ Ⓓ $V(y)-V(x)$

v. $E(x-a)=$ .....
Ⓐ $E(x)+a$ Ⓑ $E(x)-a$ Ⓒ $E(x)$ Ⓓ $E(x)+0$

vi. Standard deviation of 5,5,5,5 is .....
Ⓐ 5 Ⓑ 4 Ⓒ Zero Ⓓ $\sqrt{5}$

vii. Co-efficient of variation (C.V) = ...
Ⓐ $\frac{SD}{Mean}\times 100$ Ⓑ $\frac{Mean}{SD}\times 100$ Ⓒ $\frac{Var}{Mean}\times 100$ Ⓓ $\frac{Mean}{Var}\times 100$

viii. Fisher's index number is ..... of Laspyre's and Paache's number
Ⓐ AM Ⓑ GM Ⓒ HM Ⓓ Square

ix. Total number of possible cases with two dice will be .....
Ⓐ $(2)^6$ Ⓑ $(6)^2$ Ⓒ ${}^6C_2$ Ⓓ ${}^6P_2$

x. If $E(x)=\frac{2}{3}$ and $E(x^2)=\frac{8}{9}$ then S.D = ...
Ⓐ $\frac{4}{9}$ Ⓑ $\frac{2}{3}$ Ⓒ $\frac{9}{4}$ Ⓓ $\frac{2}{9}$

xi. ${}^nC_r=$ .....
Ⓐ $\frac{n!}{n-r!}$ Ⓑ $\frac{n!}{n!(n-r)!}$ Ⓒ $\frac{n!}{(n-r)!r!}$ Ⓓ $\frac{n!}{n!r!}$

xii. Var (3x – 4) = ...
Ⓐ 3V(x) – 4 Ⓑ 3V(x) + 4 Ⓒ 9V(x) – 4 Ⓓ 9V(x)

xiii. By empirical relation Mode =.....
Ⓐ 3Mode – 3Mean Ⓑ 3Median – 2Mean Ⓒ 2Median – 3Mean Ⓓ Median – 2Mean

xiv. Harmonic mean of 'a' and 'b' is .....
Ⓐ $\frac{a+b}{2ab}$ Ⓑ $\frac{2ab}{a+b}$ Ⓒ $\frac{a-b}{2ab}$ Ⓓ $\frac{2(a+b)}{ab}$

xv. A binomial distribution with n = 9 and P = 2/3 then its variance will be .....
Ⓐ 9 Ⓑ 6 Ⓒ 3 Ⓓ 2

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STATISTICS - (Part-I)

Time Allowed: 2:40 Hrs | **Section – B & C** | Total Marks: 60

"Section – B"

Marks: 40

Q. 2 Write short answer of any TEN of the following parts. Each part carries equal marks.

(i) Define primary and secondary data.

(ii) Show that $\sum(x-\bar{x})^2 \leq \sum(x-a)^2$

(iii) Define harmonic mean.

(iv) Differentiate between absolute and relative dispersion.

(v) Define quartile deviation.

(vi) Calculate variance of 6, 9, 12, 15 and 18.

(vii) Define Skewness.

(viii) Calculate if $m_2 = 11.2$ and $m_4 = 392$

(ix) How many possible permutations can be formed from the word "Pakistan"?

(x) Differentiate between combination and permutation.

(xi) If f(x) = Ax, $0 \leq x \leq 2$ then find the value of 'A'.

(xii) Differentiate between diagrams and graphs.

(xiii) Define random variable.

"Section – C"

Marks: 20

NOTE: Attempt any TWO questions. Each question carries equal marks.

Q. 3: Calculate Mean, Median and Mode from the following data:

Classes	13 – 17	18 – 22	23 – 27	28 – 32	33 – 37	38 – 42
f	1	1	2	3	2	1

Q. 4: Calculate Bowley coefficient of Skewness from the following data:

Marks	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70	70 – 80	80 – 90	90-100
No. of students	3	4	6	10	12	09	7	4	3	2

Q. 5: Ten unbiased Coins are tossed simultaneously. Find the probability of obtaining:

i. No head ii. 6 heads iii. At least 4 heads iv. Not more than 3 heads