

USWA COLLEGE ISLAMABAD

Entry Test

Class XI

Paper Mathematics

Time Allowed : 45 Minutes

Total Marks:30

Name : ----- Father's name:-----

Roll No .----- Group:-----

Note: All the question are to be attempted on the QUESTION PAPER.

Q. 1 Encircle the correct option i.e A/B/C/D. All Parts carry equal marks. (Marks – 18)

- i) The logarithm of any number to itself as base is
a) -1 b) 0 c) 1 d) 10
- ii) If $X + \begin{bmatrix} -1 & -2 \\ 0 & -1 \end{bmatrix} = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$, then X is equal to
a) $\begin{bmatrix} 2 & 2 \\ 2 & 0 \end{bmatrix}$ b) $\begin{bmatrix} 0 & 2 \\ 2 & 2 \end{bmatrix}$ c) $\begin{bmatrix} 2 & 0 \\ 0 & 2 \end{bmatrix}$ d) $\begin{bmatrix} 2 & 2 \\ 0 & 2 \end{bmatrix}$
A) 1 B) 2 C) 3 D) 4
- iii) Roots of the equation $4x^2 - 5x + 2 = 0$ are
A) irrational B) imaginary C) rational D) none of these
- iv) The nature of the roots of equation $ax^2 + bx + c = 0$ is determined by
A) Sum of the roots B) Product of the roots
C) Synthetic division D) discriminant
- v) In a ratio $a : b$, a is called
A) relation B) antecedent C) consequent D) none of these
- vi) If $\frac{u}{v} = \frac{v}{w} = k$, then
A) $u = wk^2$ B) x^2y^2 C) $u = w^2k$ D) $\frac{y^2}{x^4}$

(1/6)

- xvi) Radii of a circle are
A) all equal
B) double of the diameter
C) all unequal
D) half of any chord
- xvii) Angle inscribed in a semi-circle is
A) $\frac{\pi}{2}$
B) $\frac{\pi}{3}$
C) $\frac{\pi}{4}$
D) $\frac{\pi}{6}$
- xviii) Variance of the data 5, 5, 5, 5, 5, 5 is
A) 5
B) 25
C) 6
D) 0

Q. 2 Answer the following questions.

(3 X 4 = 12)

- i) Find 'm', if the roots of the equation $x^2 - 7x + 3m - 5 = 0$ satisfy the relation $3\alpha + 2\beta = 4$.

ii) The length of 32 items are given. Find the standard deviation of the distribution.

Length	20 – 22	23 – 25	26 – 28	29 – 31	32 – 34
Frequency	3	6	12	9	2

- iii) A $\sqrt{3}$ m long ladder is leaning against a wall. The bottom of the ladder is 1 m from the base of the wall. Find the acute angle (angle of elevation) the ladder makes with the ground.