## USWA COLLEGE ISLAMABAD

Entry Test

Class XI

## Paper Mathematics

Time Allowed : 45 Minutes			Total Marks:30						
Name	<u> </u>		Father's name:						
Roll N	lo		Groun:						
NOII I			Group.						
Note: All the question are to be attempted on the QUESTION PAPER.									
Q. 1	Encircle the correct	ct option i.e A/B/C	/D. All Parts carry o	equal marks. (Marks – 18)					
i)	The logarithm of a	ny number to itsel	f as base is						
	a) — 1	b) 0	c) 1	d) 10					
ii)	$ \text{If } X + \begin{bmatrix} -1 & -2 \\ 0 & -1 \end{bmatrix} $	$ = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}, \text{ then } $	$\boldsymbol{X}$ 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)		tion $4x^2 - 5x + 2 = 0$							
			C) rational						
iv)		f the roots of equation $ax^2 + bx + c = 0$ is determined by							
	A) Sum of the roots		B) Product of the roots						
,	· ·	on	D) discriminant						
v)	In a ratio $a:b$ , $a$		C) conseque	D) none of those					
	A) relation		C) conseque	ent D) none of these					
vi)	If $\frac{u}{v} = \frac{v}{w} = k$ , then	n							
	A) $u = wk^2$	B) $x^{2}y^{2}$	$C) u = w^2 k$	D) $\frac{y^2}{x^4}$					
				(1/6)					

vii)	A fraction in which the degree of numerator is greater or equal to the degree denominator is called							
	A) a proper fraction		B) an improper fraction					
	C) an equation		D) algebraic relation					
viii)	Partial fractions of $\frac{x+2}{(x+2)(x^2+2)}$ are of the form							
	$A)\frac{A}{x+1} + \frac{B}{x^2+2}$	$B)\frac{A}{x+1} + \frac{Bx+C}{x^2+2}$	C) $\frac{Ax+B}{x+1} + \frac{C}{x^2+2}$	$\frac{A}{x+1} + \frac{Bx}{x^2 + 2}$				
ix)	Power set of an er	npty set is						
	A) φ	B) {a}	C) $\{\phi,\{a\}\}$	D) $\{\phi\}$				
x)	If $A \subseteq B$ , then $A - B$	$fA \subseteq B$ , then $A - B$ is equal to						
	A) A	B) B	C) <i>\phi</i>	D) <i>B</i> – <i>A</i>				
xi)	What is the value of $m\angle AOB$ in the adjoining figure of hexagon?							
	A) $360^{\circ} \div 30^{\circ}$ B) $360^{\circ} \div 45^{\circ}$							
	c) $360^{\circ} \div 60^{\circ}$	d) $360^{\circ} \div 1$	20°					
xii)	What is the value of 'm', if $r=15cm$ and $\theta=\frac{\pi}{3}$ ?							
	A) $5\pi$	B) 45π	C) $\frac{\pi}{5}$	$\frac{\pi}{45}$				
xiii)	The most frequent occurring observation in a data set is called							
	A) mode	B) median	C) harmonice mean	D) None of these				
xiv)	$\sec\theta\cot\theta =$							
	A) $\sec \theta$	B) $\frac{1}{\cos \theta}$	C) $\frac{1}{\sin \theta}$ D)	$\frac{\sin\theta}{\cos\theta}$				
xv)	An equation, which remains unchanged when $x$ is replaced by $\frac{1}{x}$ is called							
	A) exponential equ	B) reciprocal equation						
	C) radical equation	า	D) None of these					
				(2/6)				

- 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 is
  - A) 5

- B) 25
- C) 6

D) 0

Q. 2 Answer the following questions.

 $(3 \times 4 = 12)$ 

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.