INDIAN SCHOOL MUSCAT DEPARTMENT OF MATHEMATICS CLASS TEST – OMR FORMAT

CLASS: XI TOPIC: RELATIONS & FUNCTIONS

1.	Given $R = \{(x, y): y = x - 3, x, y \in Z\}$. State which of the ordered pairs belong to the relation:							
	A) (5, 2)	B) (0, 3)	C) (7, -4)	D) (-4, 1)				
2.	If R is a relation from a finite set A having m elements to a finite set B having n elements, then the number of relations from A to B is :							
	A) 2 ^{mn}	B) $2^{mn} - 1$	C) 2mn	D) <i>m</i> ⁿ				
3.	If $f(x) = ax + b$, where a and b are integers, $f(-1) = -5$ and $f(3) = 3$, then a and b are :							
	A) -3 and 1	B) 2 and -3	C) 0 and 2	D) 2 and 3				
4.	Let R be a relation on N defined by $x+2y=8$. The domain of R is :							
	A) {2, 4, 8}	B) {2, 4, 6, 8}	C) {2, 4, 6}	D) {1, 2, 3, 4}				
5.	Let $A = \{1, 3, 5\}$ and $B = \{2, 4\}$, find R given by $R = \{(a, b): (a, b) \in A \times B, \ a > b\}$.							
	A) {(1,2), (3,2), (1,4)}	B){(3,2), (5,2), (5,4)}	C) {(3,2), (3,4), (1,4)}	D) {(1,2), (5,2), (5,4)}				
6.	If $R = \{(x, y): x, y \in \mathbb{Z}, x^2 + y^2 \le 4\}$ is a relation on \mathbb{Z} , then domain of R is :							
	A){0, 1, 2}	B) {-2,-1,0,1,2}	C) {-2, -1, 0}	D) {-2, -1}				
7.	If $(x - 1, y + 3) = (2, x + 4)$, find x and y.							
	A) $x = 1, y = 2$	B) $x = -1$, $y = -2$	C) $x = 3, y = 4$	D) $x = 2, y = 6$				
8.	If $R = \{(x,y): y = 2x + 7, where \ x \in [-5,5]\}$ is a relation, then find the range of R .							
	A)[-3, 17]	B) [-5, -5]	C) [-3, -7]	D) [-6,-1]				
9.	If the set A has p elements, B has q elements, then the number of elements in $A \times B$ is :							
	A) $p+q$	B) $p + q + 1$	C) pq	D) <i>p</i> ²				
10.	The domain of $f(x) = x - 1 + 1 + x $ is :							
	$A)(-\infty,\infty)$	B)(1,∞)	C)(−1,∞)	D)(-1,1)				
11.	The domain of the function	of the function $f(x) = \frac{x-1}{x-2}$ is :						
	A) <i>R</i>	B) R - {2}	C) $R - \{1\}$	D) $R - \{0\}$				

12. Find the domain and range of the function $f(x) = 2 - 3x^2$. A) R ; $(-\infty, -3]$ B) R ; $(-\infty, 2]$ C) R ; $(-\infty, 2)$ D) R ; $(2, \infty)$ 13. The range of the function $f(x) = - x - 1 $ is: A) $(0, \infty)$ B) $[0, \infty)$ C) $(-\infty, 0]$ D) R 14. Let R be a relation from a set A to a set B , then A) $R = A \cup B$ B) $R = A \cap B$ C) $R \subset A \times B$ D) $R \subset B \times A$ 15. A function f is defined by $f(x) = 2x^2 + 3$, for all $x \in R$. Find the element (elements) of the domain which has image 35. A) $A = A \cup B$ B) $A \cup A \cup A$ C) $A \cup A $								
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A) $f(x) = x - 1 $ B) $f(x) = x + 1 $ C) $f(x) = x + 1$ D) $f(x) = - x + 1$	20.	Which among the following functions represents the given graph :						
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