Class –Xl (Mathematics)

sample paper (chapter-1 and chapter-2)

Q.1. Which of the following is null set ?

  $(a)\ \{0\}$ $(b)\ \{\ x : x > 0\ or\ x < 0\ \}$ $(c)\ \{\ x : x^2 = \ 4\ or\ \ x = 3\ \}$ $(d)\ \{x : x^2 + 1 = 0, x \in R\}$

$Q.2.$ $If\ A\ and\ B\ are\ non\ empty\ set\ such\ that\ B\ \subset A, then$

    (a) $B' - A' = A - B$ (b) $B' - A' = B - A$ (c)$A' - B' = A - B$ (d) $A' \cap B' = B - A$

Q.3. Two finite sets have m and n elements. The number of subset of the first set is 112 more than that of the second set. The value of m and n respectively

(a) 4,7 (b) 7,4 (c) 5,2 (d) 2,5

Q.4. If A is the set of the divisors of the number 15, B is the set of prime number smaller than 10 and C is the set of even number smaller then 9, then $(A \cup C) \cap B$ is the set

(a) {1,3,5}   (b) {1,2,3 } (c) {2,5}   (d) {2,3.5}

Q.5. If X and Y are two sets then $X \cap (X \cup Y)'$ equals

(a) X   (b)Y   (c)ϕ (d) Y-X

Q.6.If n(A)=43 , n(B)=51 and n(A∪B)=75 then n[(A-B)∪(B-A)] is

(a) 53   (b) 46   (c) 56   (d) 66

Q.7. In a class Xl of 44 students , 25 play cricket and 20 play tennis, 7 play neither cricket nor tennis. then the number of students play tennis only

(a) 17 (b) 8 (c) 12   (d) 20

Q.8. If A and B are any two sets , then which of the following is not true ?

(a) $(A \cap B) \subset A$ (b) $A \subset (A \cup B)$ (c) $(A - B) \subset A$ (d) $A \subset (A - B)$

Q.9.If n(A)=33 , n(B)=27 and n(A or B)=58 then n(A-B) is

(a) 21   (b) 31   (c) 5   (d) 2

Q.10. Let $A = \{x : x \in R\ and\ x^2 - x - 2 = 0\}$ and $B = \{n : n \in Z\ and\ n^2 \leq 4\ \}$ then B-A is

(a)ϕ (b) {-1,2}   (c) {-2,0,1}   (d) {0,1}

Q.11. Let R be the relation defined on the set N of natural numbers by the rule xRy iff x+2y=8,Then domain of R is

(a) {2,4,8}   (b) {2,4,6}   (c) {2,4,6,8}   (d) {1,2,3,4}

Q.12. A={1,2,3} ,B={3,4,5} then $(A \cap B)XA$ is

(a) {(1,3),(2,3),(3,3)}   (b) {(3,1),(3,2),(3,3)}   (c){(1,3),(3,1),(3,2)}   (d) {(3,3)}

Q.13.If A={2,3,5} and B={2,5,6} then $(A - B) \times (A \cap B)$ is

(a) {(3,2),(3,3),(3,5)}   (b) {(3,2),(3.5),(3.6)}   (c) {(3,2),(3,5)}   (d) {(5,3),(5,2)}

Q.14. If A={1,2,3,4} then which of the following are function from A to itself ?

(a) f={ (x,y): y=x+1}   (b) f={ (x,y): x+y < 5}   (c) f={ (x,y): y < x}   (d) f={ (x,y) : x+y=5 }

Q.15.Let A={1,2} and then the number of relation from A to A is

(a) 4   (b) 6   (c) 8   (d) 16

Q.16 If $A = \{\phi, \{\phi\}\}$ then the power set of A is

(a) $\{\phi, \{\phi\}\}$ (b) $\{\phi, \{\phi\}, A\}$ (c) $\{\phi, \{\phi\}, \{\{\phi\}\}, A\}$ (d) $\{\phi, \{\phi\}, \{\{\phi\}\}\}$

Q.17.Let Z={1,2,3,4,5,6,7,8,9} and R be a relation on set Z defined as

$R = \{(a,b): 2a - b = 3 \text{ and } a, b \in Z\}$ then range of R is

(a) {1,3,5,7,9}   (b) {2,4,6,8}   (c) {1,2,3,4.5}   (d) {2,3,4,5,6}

Q.18.Let $f, g: R \rightarrow R$ be defined, respectively by f(x) = 2x-1 and g(x)=x^2+1. Find (f × g)(-1) is

(a) -2   (b) 6   (c) -6   (d) -4

Q.19. Find the range of real function f defined by $f(x) = \frac{3x}{2x-1}$ is

(a) R   (b) R-{1/2}   (c) R-{3/2}   (d) R-{-1/2}

Q.20.Let f={ (-1,5),(0,2),(1,-1)} be a function from Z to Z defined by f(x)=ax+b for some integers a and b. then (a,b) is

(a) (2,-1)   (b) (-1,2)   (c) (2,-3)   (d) (-3,2)