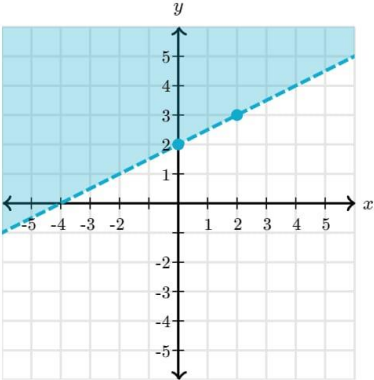



CLASS XI
CHAPTER-1
SETS
04 MARKS TYPE QUESTIONS

Q. NO	QUESTION	MARK
1.	<p>Read the Case study given below and attempt any four sub parts:</p> <p>In drilling world's deepest hole, the Kola Superdeep Borehole, the deepest manmade hole on Earth and deepest artificial point on Earth, as a result of a scientific drilling project, it was found that the temperature T in degree Celsius, x km below the surface of Earth, was given by:</p> $T = 30 + 25(x - 3), 3 < x < 15.$ <p>If the required temperature lies between 200°C and 300°C, then</p> <p>a) The depth, x will lie between</p> <ol style="list-style-type: none"> 9 km and 13 km 9.8 km and 13.8 km 9.5 km and 13.5 km 10 km and 14 km <p>b) Solve for x. $-9x+2 > 18$ OR $13x+15 \leq -4$</p> <ol style="list-style-type: none"> $x \leq -1913$ $x < -1613$ $-1613 < x < -1913$ There are no solution. <div style="text-align: center;">  </div> <p>c) Find the inequality represented by the graph</p> <ol style="list-style-type: none"> $y \leq 12x+2$ $y > 12x+2$ $y \geq 12x+2$ $y < 12x+2$ <p>d) If $x < 5$ then the value of x lies in the interval</p> <ol style="list-style-type: none"> $(-\infty, -5)$ $(\infty, 5)$ $(-5, \infty)$ $(-5, 5)$ 	4
2.	<p>A class teacher Mamata Sharma of class XI write three sets A, B and C are such that $A = \{1, 3, 5, 7, 9\}$, $B = \{2, 4, 6, 8\}$ and $C = \{2, 3, 5, 7, 11\}$.</p> <p>Answer the following questions which are based on above sets.</p> <p>(i) Find $A \cap B$.</p> <p>(a) $\{3, 5, 7\}$ (b) ϕ (c) $\{1, 5, 7\}$ (d) $\{2, 5, 7\}$</p> <p>(ii) Find $A \cap C$</p> <p>(a) $\{3, 5, 7\}$ (b) ϕ (c) $\{1, 5, 7\}$ (d) $\{3, 4, 7\}$</p> <p>(iii) Which of the following is correct for two sets A and B to be disjoint?</p>	4

	<p>(a) $A \cap B = \phi$ (b) $A \cap B \neq \phi$ (c) $A \cup B = \phi$ (d) $A \cup B \neq \phi$</p> <p>(iv) Which of the following is correct for two sets A and C to be intersecting?</p> <p>(a) $A \cap C = \phi$ (b) $A \cap C \neq \phi$ (c) $A \cup C = \phi$ (d) $A \cup C \neq \phi$</p> <p>(v) Write the $n[P(B)]$.</p> <p>(a) 8 (b) 4 (c) 16 (d) 12</p>	
3.	<p>Out of 100 students; 15 passed in English, 12 passed in Mathematics, 8 in Science, 6 in English and Mathematics, 7 in Mathematics and Science; 4 in English and Science; 4 in all the three. Find how many passed</p> <p>(i) in English and Mathematics but not in Science</p> <p>(ii) in Mathematics and Science but not in English</p> <p>(iii) in Mathematics only</p> <p>(iv) in more than one subject only</p>	4
4.	<p>In a survey of 800 people it was found that 21% of people liked to drink tea, 26% people liked to drink coffee, 29% people liked to drink milk. If 14% people liked both tea and coffee, 12% people liked both tea and milk, 14% people both coffee and milk and if 8% people liked all 3 drinks then ,</p> <p>i) The number of people liked atleast two drinks.</p> <p>a) 44 b) 352 c) 800 d) 192</p> <p>ii) The number of people liked at most two drinks</p> <p>a) 92 b) 736 c) 352 d) 800</p> <p>iii) The number people liked exactly two drinks.</p> <p>a) 11 b) 88 c) 140 d) 232</p> <p>iv) The number of people liked only milk.</p> <p>a) 11 b) 88 c) 140 d) 232</p>	4
5.	<p>The school organized a farewell part for 100 students and school management decided three types of drinks to be served, milk (M), Tea (T) and coffee (C). organizers reported that 10 students had all three drinks. 20 students had milk and coffee. 30 students had Tea and coffee. 25 students had milk and tea. 12 students had milk only. 5 students had coffee only and 8 students had tea only.</p>  <p>Based on the above information, answer the following questions –</p> <p>i) Find the number of students who did not take any drink.</p> <p>ii) Find the number of students who preferred milk.</p> <p>iii) Find the number of students who preferred coffee.</p> <p>iv) Find the number of students who preferred tea.</p>	4
6.	<p>In a library, 25 students read physics, chemistry and mathematics book. It was found that 15 students read mathematics, 12 students read physics while 11</p>	4

students read chemistry. 5 students read both math and chemistry, 9 students read both physics and mathematics. 4 students read both physics and chemistry. 3 students read all the three subjects.



Based on the above information, answer the following questions –

- i) Find the number of students who read only chemistry.
- ii) Find the number of students who read only mathematics
- iii) Find the number of students who read only one of the subjects.
- iv) Find the number of students who read none of the subject

7. The physical and mental benefits of exercise are immense. Outdoor games are an excellent form of exercise for everyone. They help us to strengthen our muscles and joints and increase flexibility. Outdoor games help children in their physical development and also boost their confidence. Children who play outdoor games are more likely to lead a well-balanced and healthy lifestyle later in their adulthood.




A survey took place in a group of 84 children. In the survey, it was found that each plays at least one game out of three viz. tennis, football and cycling. 28 of them like cycling, 40 play tennis and 48 play football. If 6 play both cricket and badminton and 4 play tennis and badminton and no one plays all the three games.

Based on the above information, answer the following questions.

- (i) How many like cycling and tennis
- (ii) How many play only one game.

4

8.	<p>In a company, 100 employees offered to do a work. In out of them, 10 employees offered ground floor only, 15 employees offered first floor only, 10 employees offered second floor only, 30 employees offered second floor and ground floor to work, 25 employees offered first and second floor, 15 employees offered ground and first floor, 60 employees offered second floor.</p>  <p>Based on above information Find</p> <p>(i) The number of employees who offered all three floors.</p> <p>(ii) The number of employees who offered ground and first floor but not second floor.</p>	4
9.	Let $U = \{1,2,3,4,5,6,8\}$, $A = \{2,3,4\}$, $B = \{3,4,5\}$, Verify that $(A \cap B)' = A' \cup B'$.	4
10.	Write the set $\{x : x \in \mathbb{Z}^+, x < 10 \text{ and } 2^x - 1 \text{ is an odd number}\}$	4

ANSWERS:

Q. NO	ANSWER	MARKS
1.	i. 9.8km and 13.8km ii. $-1913 \leq x$ iii. $y > 12x+2$ iv. (-5,5)	4
2.	(i) - (b); (ii) - (a); (iii) - (a); (iv) - (b); (v) - (c)	4
3.	i. 9.8km and 13.8km ii. $-1913 \leq x$ iii. $y > 12x+2$ iv. (-5,5)	4
4.	(i) - (b); (ii) - (a); (iii) - (a); (iv) - (b); (v) - (c)	4
5.	i) 20 ii) 47 iii) 45 iv) 53	4
6.	i) 5 ii) 4 iii) 11 iv) 2	4
7.	(i) 22 (ii) 42	4
8.	(i) 5 (ii) 10	4
9.	Verification	
10.	{1, 3, 7, 15, 31, 63, 127, 255, 511}	