

SET THEORY

Describe the following sets in roster form:	
Q1. {x:x is a letter before e in the English	Q25. How many students got distinction in either 10 th or 12 th standards but not both?
alphabet}	a) 413 b) 423 c) 403 d) None
Q2. $\{X \in \mathbb{N} : X^2 < 25\}$	
Q3. $\{X \in N : X \text{ is prime number, } 10 < X < 20 \}$ O4 $\{Y \in N : Y = 2n \text{ n } \in N\}$	Q26. What is the difference between the number
x_{4} , $x_{1} = x_{1}$, $x_{1} = x_{1}$, $x_{1} = x_{1}$	and 12 th standards to that of the students
Describe the following sets in set-builder form:	who didn't get distinction in any of 10 th and
Q5. $A = \{1, 2, 3, 4, 5, 6\}$	$12^{(1)}$ standards?
Q6. B = { 1, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$ }	
Q7. C = { 0, 3, 6, 9, 12 }	Q27. What % of the students got distinction in
Q8. $D = \{10, 11, 12, 13, 14, 15\}$	both the standards?
Q9. $E = \{0\}$	a) 10% b) 12% c) 15% d) 16%
List all the elements of the following sets:	Direction (28-30): In a class of 122 people, 56 have
Q10. A = { x : $x^2 \le 10, x \in Z$ }	Redmi phone. The number of people who have
Q11. B = {x : $x \frac{1}{(2n-1)}$, $1 \le \eta \le 5$ }	neither a Redmi phone nor Realme phone is 33.33%
Q12 C = { x : x is an integer $\frac{-1}{-1} < x < \frac{9}{-1}$ }	of the number of people who have "Realme phone".
Q12. $O = \{x : x \text{ is a yowel in the word} \}$	Realme phone.
"EQUATION"}	
	Q28. How many people have a Realme phone but
Q14. Write the set $\{\frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \frac{4}{4}, \frac{5}{24}, \frac{6}{27}, \frac{7}{24}\}$ in the set-	not Reami phone ?
builder form.	al solw. To regard a real ters. Som
	Q29. How many people have Redmi or Realme
Decide among the following set, which are subsets	phone but not both?
of which:	a) 86 b) 88 c) 98 d) 78
Q15. $A = \{x : x \text{ satisfies } x^2 - 8x + 12 = 0 \},$	Q30. How many people do not have a Realme
Q16. B = {2, 4, 6}	phone?
Q17. C = {2, 4, 6, 8},	a) 42 b) 60 c) 64 d) None
Q18. $D = \{6\}$	O24. There are 50 nearly who are member of at th
$If A = \{1, 2, 3, 4, 5\} B = \{4, 5, 6, 7, 8\} C = \{7, 8, 9, 10\}$	Q31. There are 59 people who are member of at it one of the 3 clubs $A = B \& c A = B \& C$ have
11} and $D = \{10, 11, 12, 13, 14\}$ Find:	22. 27 & 28 members respectively. 6 people
Q19. BUCUD	are members of exactly 2 clubs. How many
Q20. Α Ω (B U C)	belong to all the three clubs?
Q21. (Α Ω Β) Ω (Β U C)	022. There are 69 people who are member of at
Q22. (Α Ω D) Ω (B U C)	Q32. There are 66 people who are member of at
	have 25, 34 & 25 members respectively. 3
Q23. If $n(A-B) = 20$, $n(A\cap B) = 30$ and $n(AUB) = 84$.	people are members of all 3 clubs. How
$\begin{array}{ccc} \text{I nen find } n(B). \\ \text{a) } 34 & \text{b) } 64 & \text{c) } 50 & \text{d) } CBD \\ \end{array}$	many belong to exactly one club?
	Find A+B:
Q24. Out of 100 people, 10 play neither cricket nor	
football, 63 play football while 81 play	Q33. In a class of 120 students numbered 1 to 120,
cricket. What is the probability that out of the	all even numbered students opt for Physics,
plays exactly one game out of cricket and	whose numbers are divisible by 5 opt for
football?	Chemistry and those whose numbers are divisible by 7 ont for Math
a) 0.27 b) 0.36 c) 0.54 d) 0.90	How many opt for none of the three subjects?
Direction (25.27), Out of E25 students 220 students	a) 19 b) 41 c) 21 d) 26
orrection (25-27): Out of 525 students 320 students got distinction in their 10 th standard and 251	
students got distinction in their 12 th standard. It is	U34. In a survey it was found that 80% like
also known that 38 students didn't get distinction in	the maximum and minimum number of those

their 10th and 12th standards.

who like both?

Q35. 80% of the CAT aspirants spend time-solving Quant whereas 60% spend time-solving Verbal. If only those aspirants who spend time solving both the sections crack CAT, what is the maximum and the minimum percentage of the aspirants who will not crack CAT?

Direction:(36-39)- In a school, there are 200 students. 100 play cricket, 50 play hockey and 60 play basketball. 30 students play both cricket and hockey, 35 play both hockey and basketball, and 45 play both basketball and cricket.

- Q36. What is the maximum possible number of students who play at least one game?
- Q37. What is the maximum possible number of students who play all the 3 games?
- Q38. What is the minimum possible number of students playing at least one game?
- Q39. what is the minimum possible number of students playing all the 3 games?
- Q40. According to a survey, at least 70% of people like apples, at least 75% like bananas and at least 80% like cherries. What is the minimum percentage of people who like all three?
- Q41. In a school 70% of the boys like cricket and 50% like football. If x % like both Cricket and Football, then
 - a) $20 \le x \le 50$
 - b) x ≤ 20
 - c) x ≥ 50
 - d) $10 \le x \le 70$
- Q42. In a class of 65 students 40 like cricket, 25 like football and 20 like hockey. 10 students like both cricket and football, 8 students like football and hockey and 5 students like all three sports. If all the students like at least one sport, then the number of students who like both cricket and hockey is
 - a) 7
 - b) 8
 - c) 10
 - d) 12
- Q43. In a city, 50% of the population can speak in exactly one language among Hindi, English and Tamil, while 40% of the population can speak in at least two of these three languages.



Moreover, the number of people who cannot speak in any of these three languages is twice the number of people who can speak in all these all these three languages. If 52% of the population can speak in Hindi and 25% of the population can speak exactly in one language among English and Tamil, then the percentage of population who can speak in Hindi and in exactly one more language among English and Tamil is_____

- a) 22%
- b) 25%
- c) 30%
- d) 38%
- Q44. In a class, 60% and 68% of students passed their Physics and Mathematics examinations respectively. Then at least______ percentage of students passed both their Physics and Mathematics examination.

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