MATHS

BOOKS - JEEVITH PUBLICATIONS MATHS (KANNADA ENGLISH)

SETS

One Marks Questions With Answers

1. Represent in roaster form $\{x : x$ is vowel of English alophabet$\}$

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2. Represent in set builder form $\{1, 5, 10, 15. \ldots \ldots \}$

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3. Classifiy the following as finite or infinite set

$\{x : x\varepsilon N$ and $x^2 = 9\}$

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4. Classifiy the following as finite or infinite set

$\{x : x\varepsilon N$ and x is prime$\}$

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5. Are the following pair of sets equal? Give reason. ltrbgt

$A = (3, 4), B = \{x : x^2 + 5x + 6 = 0\}$

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6. Are the following pair of sets equal? Give reason.

$A = \{x : x$ is a letter of the work FOLLOW$\}$

$B = \{y : y$ is a letter of the word WOLF$\}$

7. Write the set of possible subsets (power set) of the set $A = \{1, 2\}$

8. If $U = \{1, 2, 3, 4, 5, 6, 8\}$, $A = \{2, 4, 6\}$, $B = \{2, 3, 5\}$ find : $A \cap B$

9. If $U = \{1, 2, 3, 4, 5, 6, 8\}$, $A = \{2, 4, 6\}$, $B = \{2, 3, 5\}$ find : $A \cup B$

10. If $U = \{1, 2, 3, 4, 5, 6, 8\}$, $A = \{2, 4, 6\}$, $B = \{2, 3, 5\}$ find : A'

11. If $U = \{1, 2, 3, 4, 5, 6, 8\}$, $A = \{2, 4, 6\}$, $B = \{2, 3, 5\}$ find : $A - B$

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12. If $U = \{1, 2, 3, 4, 5, 6, 8\}$, $A = \{2, 4, 6\}$, $B = \{2, 3, 5\}$ find : $A' \cap B'$

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13. How may elements has $P(A)$ if $A = \phi$?

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14. Write the following as intervals.

$\{x : x \varepsilon R, 3 \leq x \leq 4\}$

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15. Write the following as intervals.

$\{x : x \varepsilon R, 0 < x < 8\}$

16. Write the following sets is roster form:

$A = \{x : x \text{ is an integer and } -3 < x < 7\}$

17. Write the following sets is roster form:

$C = \{x : x \text{ is a two -digit natural number such that the sum of its digits is 8}$

18. Write the following sets is roster form:

$C = \{x : x \text{ is a two -digit natural number such that the sum of its digits is 8}$

19. Write the following sets is roster form:

$D = \{x : x \text{ is a prime number which is divisor of } 60\}$

20. Write the following sets is roster form:

$E = $ The set of all letters in the work TRIGONOMETRY

21. Write the following sets is roster form:

$F = $ The set of all letters in the work BETTER

22. Write the following sets in the set-builder form: $\{2, 4, 8, 16, 32\}$

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23. Write the following sets in the set-builder form: $\{2, 4, 8, 16, 32\}$

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24. Write the following sets in the set-builder form: $\{5, 25, 125, 625\}$

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25. Write the following sets in the set-builder form: $\{1, 4, 9, \ldots\ldots\ldots\ldots 100\}$

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26. Write the following sets in the set-builder form:

$\{1, 4, 9, \ldots\ldots\ldots\ldots 100\}$

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27. Let all the elements of the following sets:

$A = \{x : x \text{ is an odd natural number}\}$

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28. Let all the elements of the following sets:

$B = \left\{ x : x \text{ is an integer}, -\dfrac{1}{2} < x < \dfrac{9}{2} \right\}$

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29. Let all the elements of the following sets:

$C = \{x : x \text{ is an integer} x^2 \leq 4\}$

30. Let all the elements of the following sets:

$D = \{x : x \text{ is a letter in the work LOYAL}\}$

31. Let all the elements of the following sets:

$E = \{x : x \text{ is month of a year not having 31 days}\}$

32. Let all the elements of the following sets:

$F = \{x : x \text{ is a consonant in the English alphabet which precedes k}\}$

Two Marks Questions With Answers

1. If $U = \{0, 1, 2, 3, \ldots \ldots \ldots .9\}$, $A = \{0, 2, 4, 6, 8\}$ and d

$B = \{0, 2, 3, 5, 7\}$ verify that

$(A \cup B)' = A' \cap B'$

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2. If $U = \{0, 1, 2, 3, \ldots \ldots \ldots .9\}$, $A = \{0, 2, 4, 6, 8\}$ and

$B = \{0, 2, 3, 5, 7\}$ verify that

$(A \cup B)' = A' \cap B'$

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3. If A={3,5,7,9,11},B={7,9,11,13},C={11,13,15} and D={15,17}, $f \in d$AnnB`

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4. If A={3,5,7,9,11},B={7,9,11,13},C={11,13,15} and D={15,17}, $f \in d$BnnC`

5. If A={3,5,7,9,11},B={7,9,11,13},C={11,13,15} and $D = \{15, 17\}$, find

$B \cap D$

6. If A={3,5,7,9,11},B={7,9,11,13},C={11,13,15} and D={15,17}, $f \in d$AnnC`

7. If A={3,5,7,9,11},B={7,9,11,13},C={11,13,15} and D={15,17}, $f \in d$BnnD`

8. If A={3,5,7,9,11},B={7,9,11,13},C={11,13,15} and D={15,17}, $f \in d$Ann(BuuC)`

9. If A={3,5,7,9,11},B={7,9,11,13},C={11,13,15} and D={15,17}, $f \in d$AnnD`

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10. If A={3,5,7,9,11},B={7,9,11,13},C={11,13,15} and D={15,17}, $f \in d$Ann(BuuD)`

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11. If A={3,5,7,9,11},B={7,9,11,13},C={11,13,15} and D={15,17}, $f \in d$

(AnnB)nn(BuuC)`

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12. If $A = \{3, 5, 7, 9, 11\}, B = \{7, 9, 11, 13\}, C = \{11, 13, 15\}$ and $D = \{15, 17\}$, find

$(A \cap D) \cap (B \cup C)$

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13.   If

$A = \{3, 6, 9, 12, 15, 18, 21\}$, $B = \{4, 8, 12, 16, 20\}$, $C = \{2, 4, 6, 8, 10, 12, 1$

and $D = \{5, 10, 15, 20\}$ find: $D - B$

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14.   If

$A = \{3, 6, 9, 12, 15, 18, 21\}$, $B = \{4, 8, 12, 16, 20\}$, $C = \{2, 4, 6, 8, 10, 12, 1$

and $D = \{5, 10, 15, 20\}$ find: $A - D$

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15.   If

$A = \{(3, 6, 9, 12, 15, 18, 21\}$, $B = \{4, 8, 12, 16, 20\}$, $C = \{2, 4, 6, 8, , 10, 12$

and $D = \{5, 10, 15, 20\}$ find: $A - D$

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16. If

$A = \{3, 6, 9, 12, 15, 18, 21\}, B = \{4, 8, 12, 16, 20\}, C = \{2, 4, 6, 8, 10, 12, 1$

and $D = \{5, 10, 15, 20\}$ find: $D - B$

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$A = \{3, 6, 9, 12, 15, 18, 21\}, B = \{4, 8, 12, 16, 20\}, C = \{2, 4, 6, 8, 10, 12, 1$

and $D = \{5, 10, 15, 20\}$ find: $A - D$

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$A = \{3, 6, 9, 12, 15, 18, 21\}, B = \{4, 8, 12, 16, 20\}, C = \{2, 4, 6, 8, 10, 12, 1$

and $D = \{5, 10, 15, 20\}$ find: $D - B$

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$A = \{3, 6, 9, 12, 15, 18, 21\}, B = \{4, 8, 12, 16, 20\}, C = \{2, 4, 6, 8, 10, 12, 1$

and $D = \{5, 10, 15, 20\}$ find: $D - B$

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21. If

$A = \{3, 6, 9, 12, 15, 18, 21\}, B = \{4, 8, 12, 16, 20\}, C = \{2, 4, 6, 8, 10, 12, 1$

and $D = \{5, 10, 15, 20\}$ find: $D - B$

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22.   If

$A = \{(3, 6, 9, 12, 15, 18, 21\}, B = \{4, 8, 12, 16, 20\}, C = \{2, 4, 6, 8, , 10, 12$

and $D = \{5, 10, 15, 20\}$ find: $D - B$

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23.   If

$A = \{3, 6, 9, 12, 15, 18, 21\}, B = \{4, 8, 12, 16, 20\}, C = \{2, 4, 6, 8, 10, 12, 1$

and $D = \{5, 10, 15, 20\}$ find: $D - B$

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24.   If

$A = \{3, 6, 9, 12, 15, 18, 21\}, B = \{4, 8, 12, 16, 20\}, C = \{2, 4, 6, 8, 10, 12, 1$

and $D = \{5, 10, 15, 20\}$ find: $D - B$

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25. If $U = \{1, 2, 3, 4, 5, 6, 8\}$, $A = \{2, 4, 6\}$, $B = \{2, 3, 5\}$ find : A'

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26. If $U = \{1, 2, 3, 4, 5, 6, 8\}$, $A = \{2, 4, 6\}$, $B = \{2, 3, 5\}$ find : A'

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27. Let $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$, $A = \{1, 2, 3, 4\}$, $B = \{2, 4, 6, 8\}$ and $C = \{3, 4, 5, 6\}$: Find:$(A \cup C)'$

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28. Let $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$, $A = \{1, 2, 3, 4\}$, $B = \{2, 4, 6, 8\}$ and $C = \{3, 4, 5, 6\}$: Find:$(A \cup C)'$

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29. If $U = \{1, 2, 3, 4, 5, 6, 8\}$, $A = \{2, 4, 6\}$, $B = \{2, 3, 5\}$ find : A'

> ▶ Watch Video Solution

30. Let $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$, $A = \{1, 2, 3, 4\}$, $B = \{2, 4, 6, 8\}$ and $C = \{3, 4, 5, 6\}$: Find: $(B - C)'$

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31. Let $U = \{a, b, c, d, e, f, g, h\}$ find the complements of the following sets:

$C = \{a, c, e, g\}$

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32. Let $U = \{a, b, c, d, e, f, g, h\}$ find the complements of the following sets:

$C = \{a, c, e, g\}$

33. Let$U = \{a, b, c, d, e, f, g, h\}$ find the complements of the following

sets:

$C = \{a, c, e, g\}$

34. Let$U = \{a, b, c, d, e, f, g, h\}$ find the complements of the following

sets:

$D = \{f, g, h, a\}$

35. If $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$, $A = \{2, 4, 6, 8\}$ and $B = \{2, 3, 5, 7\}$.

Verify that : $(A \cup B)' = A' \cap B'$

36. If $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$, $A = \{2, 4, 6, 8\}$ and $B = \{2, 3, 5, 7\}$.

Verify that : $(A \cup B)' = A' \cap B'$

37. Let $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$, $A = \{1, 2, 3, 4\}$, $B = \{2, 4, 6, 8\}$

and $C = \{3, 4, 5, 6\}$: Find:$(A \cup C)'$

38. If A={3,5,7,9,11},B={7,9,11,13},C={11,13,15} and $D = \{15, 17\}$, find

$(A \cap B) \cap (B \cup C)$

39. Let $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$, $A = \{1, 2, 3, 4\}$, $B = \{2, 4, 6, 8\}$ and $C = \{3, 4, 5, 6\}$: Find:$(A \cup C)'$

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40.   Set

$U = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9\} A = \{0, 1, 3, 5, 7\}$, $B = \{0, 2, 4, 6, 8\}$, $C = \{$

Find the following:$A' \cap (B' - C)$

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41. Ilf A and B are two sets such that $A \cup B$ has 50 elements, A has 28 elements and B has 32 elements, how many elements does $A \cap B$ have?

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42. If X and Y are two sets such that X has 40 elements , $X \cup Y$ has 60 elements and $X \cap Y$ has 10 elements , how many elements does Y have ?

43. Ilf A and B are two sets such that $A \cup B$ has 50 elements, A has 28 elements and B has 32 elements, how many elements does $A \cap B$ have?

44. In a group of 400 people , 250 can speak Hindi and 200 can speak English. How many people can speak both Hindi and English ?

45. Ilf A and B are two sets such that $A \cup B$ has 50 elements, A has 28 elements and B has 32 elements, how many elements does $A \cap B$ have?

46. If X and Y are two sets such that X has 40 elements , $X \cup Y$ has 60 elements and $X \cap Y$ has 10 elements , how many elements does Y have ?

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Three Marks Quesetion With Answerers

1. In a class of 40 students 30 play cricket and 18 play hockey. If the students plays either circket or hockey find the number of students who paly Hockey only.

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2. In a group of 400 people , 350 can speak Hindi and 300 can speck English . How many people can speak both Hindi and English ?

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3. In a group of 70n people , 37 like coffee, 52 like tea and each person likes at least one of the two drinks . How many people like both coffee and tea ?

4. In a class of 35 students, 17 have taken Mathematics , 10 have taken Mathematics but not Economics. Find the number of students who have taken Economics but not Mathematics , if the given that each student have taken either Mathematic or Economic or both.

5. A college awarded 38 medals in football, 15 in basket ball and 20 in circket. If the these medals went to a totakl of 58 men and only 3 men got

medals in all the 3 sports , how many received medals in excatly two of the three sports ?

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6. Out of 500 car owners investigasted , 400 owned car A, 200 owend car B and 50 owend both the cars. Is this data correct ?

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7. In a group of 400 people , 250 can speak Hindi and 200 can speak English. How many people can speak both Hindi and English ?

> ▶ Watch Video Solution

8. If X and Y are two sets such that X has 40 elements , $X \cup Y$ has 60 elements and $X \cap Y$ has 10 elements , how many elements does Y have ?

> ▶ Watch Video Solution

9. In a group of 70n people , 37 like coffee, 52 like tea and each person likes at least one of the two drinks . How many people like both coffee and tea ?

10. In a group of 65 people , 40 like cricket , 10 like both cricket and tennis . How many like tennis only and not cirkcet ? How many like tennis?

11. In a committee, 50 people speak French 20 speak Spanish and 10 speak both Spanish and French. How many speak at least on of the these two languages ?

12. In a survey of 600 students in a school, 150 students were found to be taking tea and 225 taking coffee, 100 were taking both tea and coffee. Find how many students were taking neither tea nor coffee ?

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13. In a group of students , 100 students know Hindi , 50 know English and 25 know both . Each of the students know either Hindi or English . How many students are there in the group ?

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14. In a survey of 60 people , it was found that 25 people read newspaper H, 26 read newspaper T,26 read newspaper I , 9 read both H and I, 11 read both H and T. S read both T and I, 3 read all there newaspaper . Find b:

(i) the number of people who read at least one of the newspaper .

(ii) the number of people who read exactly one newspaper.

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15. In a survey it was found that 21 people liked porduct A, 26 liked product B and 29 liked product C. If 14 people liked product A and B , 12 people like products C and A, 14 people liked products B and C and 8 liked all the three products. Find how many liked product C only.