

90, 9 and 0, 2, 4, 5 are overlapping.

Ex - 10 (D)

8. Write True and False -

i) $\{ \dots, -8, -4, 0, 4, 8 \}$ is a finite set. False

ii) $\{-32, -28, -24, \dots, 0, 4, 8, 16\}$ is an infinite set. False

iii) $\{x : x \text{ is a natural number less than } 1\}$ is the empty set. True

iv) $\{ \text{Whole nos. between } 15 \text{ and } 16 \}$ = $\{ \}$ Natural nos between 5 and 6 is \emptyset True

v) $\{ \text{Odd nos. divisible by } 2 \}$ is the empty set. True

vi) $\{ \text{Even Natural nos. divisible by } 2 \}$ is the empty set. False

ii) $\{x : x \text{ is positive } x < 0\}$ is the empty set.
True

iii) $\{ \dots, -5, -3, -1, 1, 3, 5, \dots \}$ is a finite set. False

Q. State giving reasons which of the following pairs are disjoint sets and which are overlapping sets.

i) $A = \{\text{Girls with ages below 15 years}\}$ and $B = \{\text{Girls with the ages above 15 years}\}$ are disjoint sets because girls above 15 yrs and below 15 yrs will not be same they will differ.

ii) $C = \{\text{Boys above the age 20 years}\}$ and $D = \{\text{Boys above the age 17 years}\}$ are overlapping boys above 20 years will same in above 17 yrs.

iii) $A = \{\text{Natural nos. between 35 and 60}\}$ & $B = \{\text{Natural nos. between 50 and 80}\}$ are overlapping - nos. between 35 to 60 will same in 50 and 80

iv) $P = \{\text{Students of VI studying in ICSE Board}\}$ & $Q = \{\text{Students of class VI}\}$

Ans. Overlapping - The students of class VI in ICSE board will be same in given set.

i) $A = \{ \text{Natural nos. that are multiples of 3 and} \}$
 $B = \{ \text{Natural nos. divisible by 4 and lying} \}$
 between 20 and 45 } some
 are overlapping. - The nos. of multiples of
 3 are divisible by 4. }

ii) $P = \{ \text{later in the word 'ALLAHABAD'} \}$ and
 $Q = \{ \text{letters in the word 'MUSSORIE'} \}$
 are Disjoint the letters used in both words
 are different.

7. State, infinite or finite set

- i) $\{ 2, 4, 6, 8, \dots, 800 \}$ finite set
- ii) $\{ \dots, -5, -4, -3, -2 \}$ infinite set
- iii) $\{ x : x \text{ is an integer between } -60 \text{ and } 60 \}$
finite set
- iv) $\{ \text{No. of electrical appliances working in} \}$
your house } finite set
- v) $\{ x : x \text{ is a whole no. greater than } 20 \}$
infinite set
- vi) $\{ x : x \text{ is a whole no. less than } 20 \}$
finite set.