

CW
24/9/21

Ch-6

Rev-

Sets

$$1. (i) A \cup B = \{a, b, d, e\} \cup \{b, c, e, f\} \\ = \{a, b, c, d, e, f\}$$

$$(ii) A' \cap B \in \mathcal{E}$$

$$A' = \{b, f, g, h\}$$

$$A' \cap B = \{b, f, g, h\} \cap \{b, c, e, f\} \\ = \{b, f\}$$

$$(iii) A - B = \{a, b, d, e\} - \{b, c, e, f\} \\ = \{a, d\}$$

$$(iv) B - A = \{b, c, e, f\} - \{a, b, d, e\} \\ = \{b, c\}$$

$$(v) (A \cup B)' = \{a, c, d, e\} \cup \{b, c, e, f\} \\ = \{a, b, c, d, e, f\}$$

$$(i) A' = A - \{1, 3, 5, 6\} \\ = A' = \{2, 5, 7, 8, 9, 10\}$$

$$(ii) B' = B - \{1, 2, 5\} \\ B' = \{3, 4, 6, 7, 8, 9, 10\}$$

$$(iii) A' \cup B' = \{2, 5, 7, 8, 9, 10\} \cup \{3, 4, 6, 7, 8, 9, 10\} \\ = \{2, 3, 4, 5, 6, 7, 8, 9, 10\}$$

$$(iv) (A \cap B)' = \{2, 3, 4, 5, 6, 7, 8, 9, 10\}$$

~~$$(v) A \cup B$$~~

$$(i) B - A = \{1, 5\} - \{1, 5, 6, 7, 9\} \\ = \{ \} = \phi$$

$$(ii) A$$

$$A = \{1, 5, 6, 7, 9\}$$

$$(iii) B^c = \{1, 5\}$$

$$B' = \{2, 3, 4, 6, 7, 8, 9, 10\}$$

$$(iv) A \cap B$$

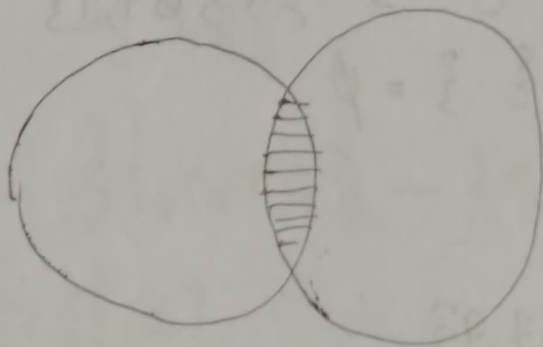
$$A \cap B = \{1, 5, 6, 7, 9\} \cap \{1, 5\}$$

$$= \{1, 5\}$$

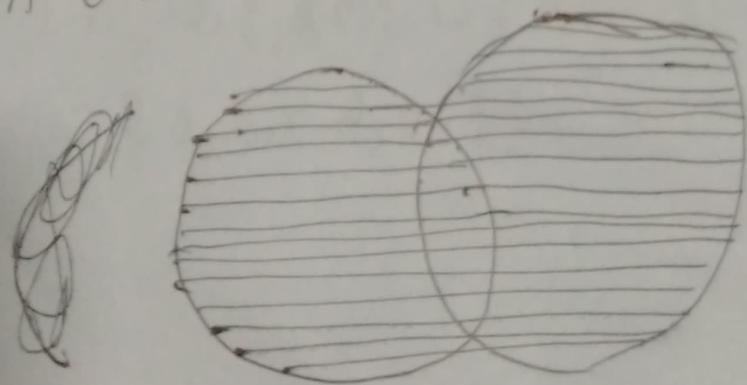
$$(v) A \cup B = \{1, 5, 6, 7, 9\} \cup \{1, 5\}$$

$$= \{1, 5, 6, 7, 9\}$$

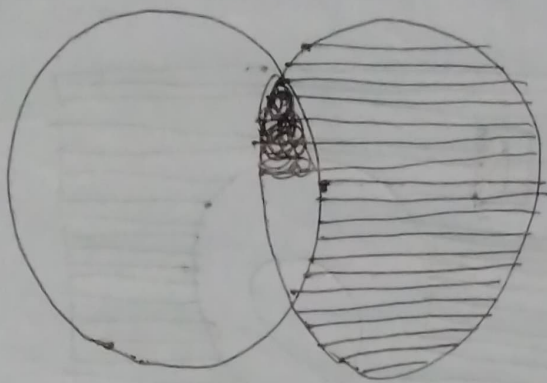
Q. 4. (i) $A \cap B$



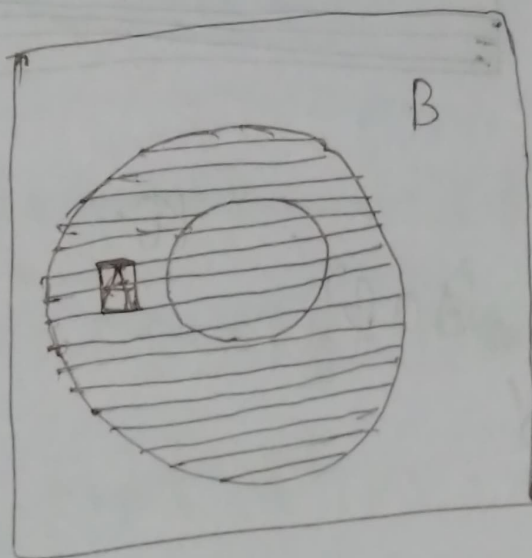
(ii) $A \cup B$



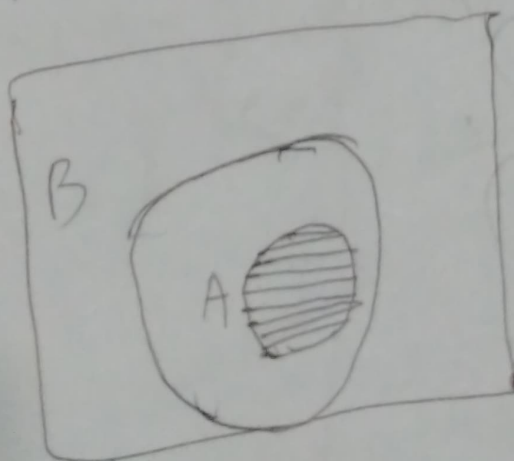
(iii) $B - A$



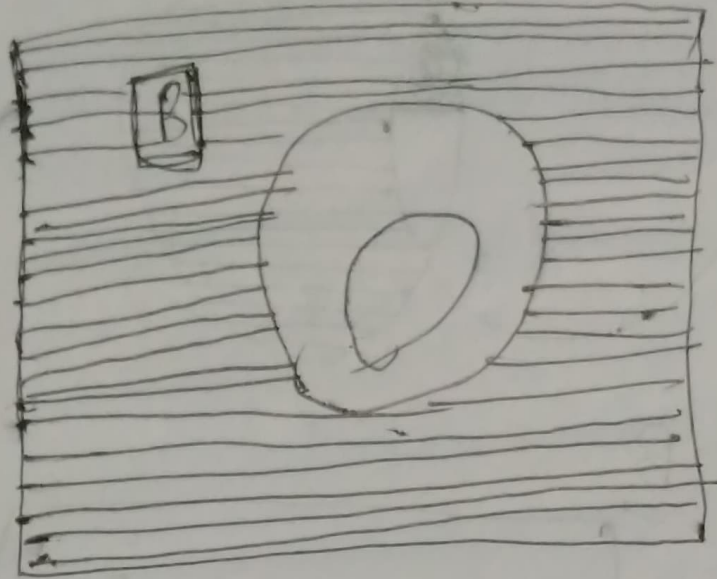
(i) $A \cup B$



(ii) $B' \cap A$



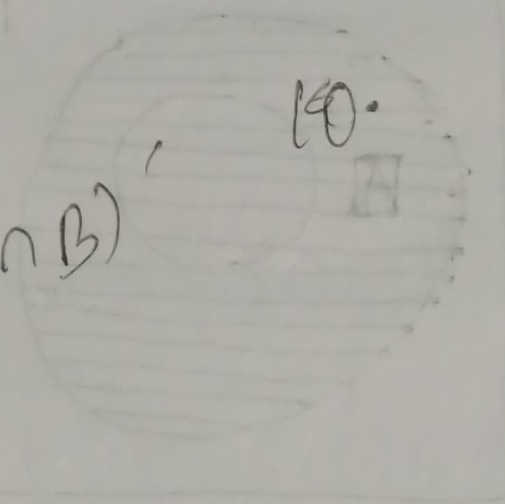
(iv) $(A \cup B)'$



8. (i) $(A \cup B)'$

(ii) $B - A$ $(A \cap B)'$

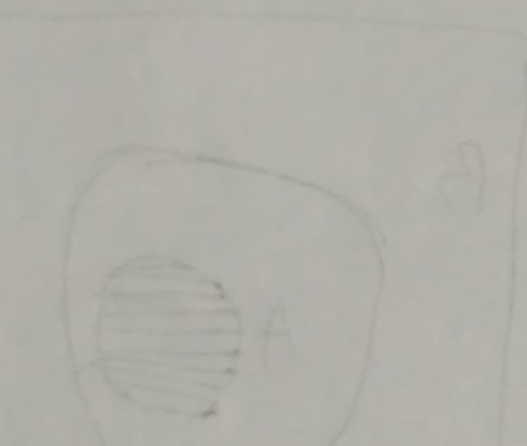
(iii) $(B - A)'$



9. (i) $(B - A)''$

(ii) $(A \cap B)'$

(iii) $(P \cup Q)'$



$$(i) (A \cup B) - C$$

$$A \cup B = \{a, b, c, d\} \cup \{c, d, e, f\}$$

$$(A \cup B) - C = \{a, b, c, e, f\} - \{b, c, e, f\}$$

$$= \{a, d, g\}$$

$$(ii) B - (A \cap C)$$

$$A \cap C = \{a, b, c, d\} \cap \{b, c, e, f\}$$

$$= \{b, c\}$$

$$B - (A \cap C) = \{c, d, e, f\} - \{b, c\}$$

$$= \{d, e, f\}$$

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

$$B \cap C = \{c, d, e, f\} \cap \{b, c, e, f\}$$

$$= \{c, e\}$$

$$11. (i) \quad \text{ ~~} \{a, d\} = \{a, b, e, d\} - \{b, c, e, f\} \text{ } \\ = A - B~~$$

$$(ii) \quad \{a, b, c, f\} = \{A \cup B\} - \{b, e\} \\ = (A \cup B) - (A \cap B)$$

$$A \text{ is } \{a, b, c, f\} = (A - B) \cup (B - A)$$

$$(iii) \quad \{a, b, c, f, g, h\} = (A \cap B)'$$

$$[\because \{b, e\} = A \cap B \therefore (A \cap B)' = \{a, d, c, f, g, h\}]$$

$$(iv) \quad \{a, d, g, h\} = B'$$

$$[\because \{b, c, e, f\} = B \therefore B' = \{a, d, g, h\}]$$

$$(v) \quad \{g, h\} = (A \cup B)'$$

$$[\because A \cup B = \{a, b, c, d, e, f\} \therefore (A \cup B)' = \{g, h\}]$$