

Answer no: 6

Given that,

$$U = \{1, 2, 3, \dots, 8, 9\}$$

$$A = \{1, 2, 5, 6\}$$

$$B = \{2, 5, 7\}$$

$$C = \{1, 3, 5, 7, 9\}$$

$$(a) A \cap B = \{1, 2, 5, 6\} \cap \{2, 5, 7\} \\ = \{2, 5\}$$

$$A \cap C = \{1, 2, 5, 6\} \cap \{1, 3, 5, 7, 9\} \\ = \{1, 5\}$$

$$(b) B \cup C = \{2, 5, 7\} \cup \{1, 3, 5, 7, 9\} \\ = \{1, 2, 3, 5, 7, 9\}$$

$$(c) A^c = U - A \\ = \{1, 2, 3, \dots, 8, 9\} - \{1, 2, 5, 6\} \\ = \{3, 4, 7, 8, 9\}$$

$$C^c = \{1, 2, 3, \dots, 8, 9\} - \{1, 3, 5, 7, 9\} \\ = \{2, 4, 6, 8\}$$