<u>Solution of Week-0</u>

① Answer - (b)
Explanation -
$$44 = 32 + 8 + 4$$
$$= (1 \times 2^5) + (0 \times 2^4) + (1 \times 2^3)$$
$$+ (1 \times 2^2) + (0 \times 2^1) + (0 \times 2^0)$$

$$\therefore (44)_{10} = (101100)_2$$

② Answer - (d)
Explanation -
$$54 = 3 \times 16 + 6 \times 16^0$$
$$\Rightarrow (54)_{10} = (36)_{16}$$

③ Answer - (c)

④ Answer - (a)

⑤ Answer - (b)

⑥ Answer - (a)

⑦ Answer - (c)

⑧ Answer - (c)
Explanation - According to precedence of operators, $\times$ is evaluated first. $+$ and $-$ have equal priorities. Hence $1 + 6 - 2 = 5$

⑨ Answer - (d)
Explanation -
$$(1010111011)_2$$
$$= (1 \times 2^0) + (1 \times 2^1) + (0 \times 2^2) + (1 \times 2^3) + (1 \times 2^4)$$
$$+ (1 \times 2^5) + (0 \times 2^6) + (1 \times 2^7) + (0 \times 2^8) + (1 \times 2^9)$$
$$= 699$$
$$= 512 + 128 + 56 + 3$$
$$= 1 \times 8^3 + 2 \times 8^2 + 7 \times 8^1 + 3 \times 8^0$$
$$= (1273)_8$$

⑩ Answer - (b)