The label on the bottle of H_2O_2 solution reads as 10 volume. The concentration of H_2O_2 in percentage by volume is nearly,

(A) 3.03% (B) 6.06% (C) 1.51% (D) 10%

Solution

10 volume H_2O_2 means 1 volume H_2O_2 solution gives 10 volume O_2.

It is the actual amount of H_2O_2 present in the solution that is involved in the reaction,

$$2H_2O_2 \rightarrow 2H_2O + O_2$$

So, 2 mol of H_2O_2 present in the solution gives 22400 ml of O_2.

Or 22400 ml O_2 is formed by 68 gm H_2O_2 present in the solution.

So, 10 ml O_2 is formed by $\frac{68}{22400} \times 10$ gm H_2O_2 present in the solution.

Since, 1 volume H_2O_2 solution gives 10 volume O_2,

Thus, 10 ml O_2 is formed by 1 ml H_2O_2 solution.

So, 1 ml H_2O_2 solution contains $\frac{68}{22400} \times 10$ gm H_2O_2.

Therefore, 100 ml H_2O_2 solution contains $\frac{68}{22400} \times 10 \times 100$ gm H_2O_2.

Which is approximately 3.035% (by volume).

Option (A).