

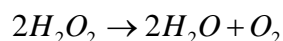
The label on the bottle of  $H_2O_2$  solution reads as 10 volume. The concentration of  $H_2O_2$  in percentage by volume is nearly,

- (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,



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).