10. If $(1-p)$ is a root of quadratic equation $x^2 + px + 1(1-p)=0$, then its roots are (2004)

1) 0, 1 2) –1, 2 3) 0, –1 4) –1, 1

Ans.

(3) $(1-p)^2 + p(1-p) + (1-p) = 0$ (since $(1 - p)$ is a root of the equation $x^2 + px + (1 - p) = 0$)

$\Rightarrow (1-p)(1-p + p + 1) = 0$

$\Rightarrow 2(1-p) = 0 \Rightarrow (1-p) = 0 \Rightarrow p = 1$

sum of root is $\alpha+\beta=-p$ and product $\alpha\beta = 1 - p = 0$ (where $\beta = 1 - p = 0$)

$\Rightarrow \alpha + 0 = -1 \Rightarrow \alpha = -1 \Rightarrow$ Roots are 0, –1