Question 8: If $2+i\sqrt{3}$ is a root of the equation $x^2 + px + q = 0$, where p and q are real, then (p, q) equals

(a) (-4, 7)

(b) (4, -7)

(c) (-7, 4)

(d) (4, 7)

Solution:

If $2+i\sqrt{3}$ is a root of the equation $x^2 + px + q = 0$, the other root will be $2-i\sqrt{3}$.

Sum of roots = -p

$= 2+i\sqrt{3}+ 2-i\sqrt{3}$

$= 4$

$=> p= -4$

Product of roots = q

$= (2+i\sqrt{3})(2-i\sqrt{3})$

$= 4 +2\sqrt{3}i - 2\sqrt{3}i + 3$

$= 7$

So (p,q) = (-4, 7)

Hence option a is the answer.