. The equation of the plane which contains the line of intersection of the planes $x + y + z - 6 = 0$ and $2x + 3y + z + 5 = 0$ and perpendicular to the xy plane is:

A. $x - 2y + 11 = 0$

B. $x + 2y + 11 = 0$

C. $x + 2y - 11 = 0$

D. $x - 2y - 11 = 0$

B. $x + 2y + 11 = 0$

Equation of the required plane is
$(x + y + z - 6) + \lambda(2x + 3y + z + 5) = 0$
i.e. $(1 + 2\lambda)x + (1 + 3\lambda)y + (1 + \lambda)z + (-6 + 5\lambda) = 0$
This plane is perpendicular to xy plane whose equation is $z = 0$
i.e. $0 . x + 0 . y + z = 0$
$\therefore$ By condition of perpendicularity
$0 .(1 + 2\lambda) + 0. (1 + 3\lambda) + (1 + \lambda) .1 = 0$
i.e. $\lambda = -1$
$\therefore$ Equation of required plane is
$(1 - 2)x + (1 - 3)y + (1 - 1)z + (-6 - 5) = 0$
or $x + 2y + 11 = 0$