4. The equation of the circle passing through the point (1, 0) and (0, 1) and having the smallest radius is -

उस वृत्त का समीकरण जो बिन्दुओं (1, 0) तथा (0, 1) से होकर जाता है तथा जिसकी त्रिज्या न्यूनतम है, है :

(1) $x^2 + y^2 - 2x - 2y + 1 = 0$ $\qquad$ (2*) $x^2 + y^2 - x - y = 0$ $\quad$ **[AIEEE-2011, II, (4, –1), 120]**

(3) $x^2 + y^2 + 2x + 2y - 7 = 0$ $\qquad$ (4) $x^2 + y^2 + x + y - 2 = 0$

Ans:- (2)

Circle whose diametric end points are (1, 0) and (0, 1) will be of smallest radius.

$\Rightarrow \quad (x - 1)(x - 0) + (y - 0)(y - 1) = 0$

$\Rightarrow \qquad\qquad x^2 + y^2 - x - y = 0$