2. The equation of the circle passing through the foci of the ellipse $\frac{x^2}{16}+\frac{y^2}{9}=1$, and having centre at $(0, 3)$ is

[JEE M 2013]

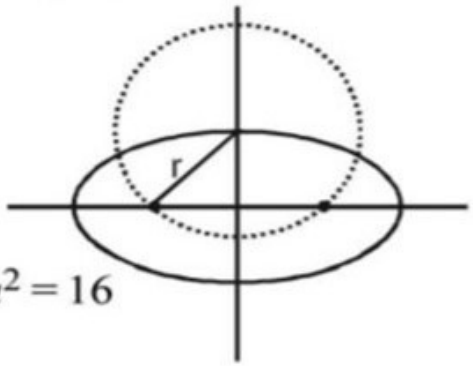
(a) $x^2+y^2-6y-7=0$ (b) $x^2+y^2-6y+7=0$

(c) $x^2+y^2-6y-5=0$ (d) $x^2+y^2-6y+5=0$

Solution: -

2. (a) From the given equation of ellipse, we have

$a=4, b=3, e=\sqrt{1-\frac{9}{16}}$



$\Rightarrow \quad e=\frac{\sqrt{7}}{4}$

Now, radius of this circle $= a^2 = 16$

$\Rightarrow$ Focii $= (\pm\sqrt{7}, 0)$

Now equation of circle is $(x-0)^2+(y-3)^2=16$

$x^2+y^2-6y-7=0$