The curvature of a circle of radius y'is [] 2. The parametric equation of a parabola $y^2 = 4ax$ is 3 The locus of central of curvature is called [Evolute] 4 The nadius of curvature at (3,4) on the curve Answer Given $x^2+y^2=25$ $\Rightarrow Cx-0)^2+(y-0)^2=5^2 \text{ which is a circle,}$ with centre (0,0) and .: Radius of curvature 19=5 gradius 5. 5. The evolute of a curve is the local of centre of curvature 6 The radius of curvature of a curve y-sinx at N=To is Anener at x = T $y = 4 \sin x$ $\frac{dy}{dx} = 4 \cos x$ $\frac{dy}{dx} = 4 \cos x$ $\frac{dy}{dx} = \frac{1}{2} \cos x$ $\frac{dy}{dx^2}$ dry = -4 sinoc dry = -4 sint = -4 (1) = -4 $S = \frac{1 + \frac{dy}{dx}}{1 + \frac{dy}{dx}} = \frac{1}{1 + \frac{dy}{dx}} = \frac{1}$ 191=1 7. The curvature of the straight line is [0] The radius of curvature of a circle at any point

is same as its Fradius)

3=142

9. The radius of curvature of the curve y=0 at)(=0 (S (2/2)

Angwer:

$$\frac{y = e^{x}}{dx} = e^{x} = e^{x}$$

$$\frac{dy}{dx} = e^{x}$$

$$\frac{dy}{dx} = e^{x}$$

$$\frac{dy}{dx} = e^{x}$$

$$\frac{d^{2}y}{dx^{2}} = e^{x}$$

$$S = \frac{(1+\frac{dy}{dy})^{2}}{(\frac{dy}{dy})^{2}} = \frac{(1+\frac{1}{2})^{2}}{(1+\frac{1}{2})^{2}} = 2^{3} = 2 \cdot 2^{\frac{1}{2}} = 2\sqrt{2}.$$

10. The envelope of the barily of curves Ax+Bx+C=0 (\alpha is parameter) is B-4Ac =0

1) It the grading of curvature and curvature of a curve at any point are g and k respectively, then g=1

12. The convature at any point of the circle is

equal to Reciprocal of its nadius. 13. A curve which touches each member of the barrily

of curves is called [Envelope] of that barrily. The equation of the circle of curvature, with centre of curvature at (x, y) and radius of curvature

 $(x-x)^2+(y-y)^2=g^2$

15 The parametric form of $xy=c^2$ is x=ct, $y=\frac{c}{t}$

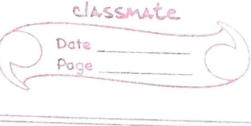
16 Evolute of a curve is [Envelope] of the mormals of that curve.

The grading of curvature in polar coordinates is $g = \frac{(r^2 + r)^2}{r^2 - rr'' + 2r'^2}$

18. Evolute of the cycloid x = a(0-sino), y = a(1-coso) is (cycloid)

curvature of the circle $x^2+y^2=a^2$ is $\begin{bmatrix} a \end{bmatrix}$ Envelope of the curve y=mx+a, m' being parameter is $y^2-4ax=0$

8	I The radius of curvature of r=ancosno at (r, o)
	$\frac{1}{1} \frac{1}{1} \frac{1}$
2	$(n+1)$ x^{n-1}
	The nadius of curvature of r= a cosp at (r,0) is
	2
2	Write the equation of the circle of curvature $(x-\bar{x})^2 + (y-\bar{y})^2 = 2$
٩	$(x-\bar{x})^2 + (y-\bar{y})^2 = g^2$
	The envelope of the family of straight line is
	y=mx+q is y2=4ax
	A = mx + d
	=> 4m = m_>c+a
	$m^2 3 c - y m + a = 0$ $Ax^2 + B 3 c + C = 0$
	Envelope is $B^2 - 4AC = 0$, $A = x$, $B = -y$, $C = q$.
	$(-y)^{2} - 4 \times \alpha = 0$ $y^{2} - 4 \times \alpha = 0$
	$y^2 = 4\alpha x$.
25	The radius of converting at any paint and la
	the conversacoso is (2)
21	
	The evolute of the parabola $y^2 = 4ax$ is $\left[27 ay^2 = 4 (x - 2a)^3\right]$
27	The parametric equation of a huperbal is
	The parametric equation of a hyperbola is $[x=a \sec o, y=b \tan o]$
28	
J	The envelope of the normal to the curve is the Evolute of a curve.
	Lyonno joba cure.
29.	The neciprocal of the curvature of the curve
	at any point p'is called [Rading of curvature]
or a second	though of curvature



The envelope of the normal to the curve is the [Evolute/

[Evolute] is defined as the locus of contre of curvature.

The envelope of ty-x=at2, t is the parameter, is

42 = 4 ax