#### **HYPERBOLA**

1.	If e, e'	are the eccentricities of hyperbolas	$\frac{x^2}{a^2}$ –	$-\frac{y^2}{b^2}$	= 1	and	$\frac{y^2}{b^2}$ –	$-\frac{x^2}{a^2} = 1, \text{ ther}$	n
	(1)	2/	/D	١ -		-1			

$$(A) e = e'$$

(B) 
$$e = -e^{t}$$

(C) 
$$e e' = 1$$

(D) 
$$\frac{1}{e^2} + \frac{1}{e^{\prime 2}} = 1$$

2. Centre of the hyperbola 
$$x^2 + 4y^2 + 6xy + 8x - 2y + 7 = 0$$
 is,

(B) (0, 2)

(D) none of these.

3. The eccentricity of the hyperbola 
$$2x^2 - y^2 = 6$$
 is

$$(A)\sqrt{2}$$

(B) 2

(D) 
$$\sqrt{3}$$

4. The radius of the director circle of the hyperbola 
$$\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$$
 is

(B) 
$$\sqrt{a-b}$$

(C) 
$$\sqrt{a^2 - b^2}$$

(D) 
$$\sqrt{a^2 + b^2}$$

5. The tangent to the curve 
$$x = a(\theta - \sin \theta)$$
;  $y = a(1 + \cos \theta)$  at the points  $\theta = (2k + 1)\pi$ ,  $k \in Z$  are parallel to

$$(A) y = x$$

(B) 
$$y = -x$$

(C) 
$$y = 0$$

(D) 
$$x = 0$$

6. The legth of latus rectum for hyperbola 
$$\frac{x^2}{16} - \frac{y^2}{9} = 1$$
 is

(A) 
$$\frac{32}{3}$$

(B) 
$$\frac{9}{2}$$

$$(C)\frac{8}{3}$$

(D) none of these

7. The straight line 
$$y = 3x + c$$
 will be tangent to hyperbola  $\frac{x^2}{25} - \frac{y^2}{16} = 1$  if  $c^2$  is equal to

(A) 119

(B) 225

(C) 209

(D) 144

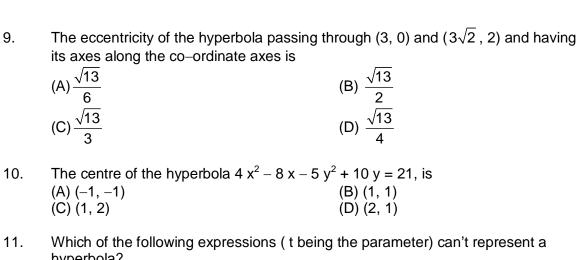
8. Co-ordinates of the foci of the hyperbola 
$$\frac{(x-1)^2}{9} - \frac{(y-2)^2}{16} = 1$$
 are

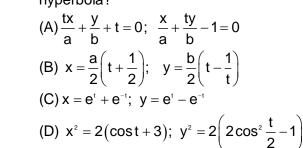
(A) (1, 7) and (1, -3)

(B) (6, 2) and (-4, 2)

(C) (1, 3) and (1, -7)

(D) None of these





12. Centre of the hyperbola 
$$\frac{(x-1)^2}{4} - y^2 = 1$$
, is

(A) (0, 1)
(B) (1, 0)
(C) (2, 0)
(D) (0, 2)

13. Centre of the hyperbola 
$$\frac{(x-1)^2}{4} - \frac{y^2}{16} = 1$$
 is

(A) (0, 1)
(C) (2, 0)
(B) (1, 0)
(D) (0, 2)

14. Length of the latus rectum of the hyperbola  $xy = c^2$  is (A) 2 c (B) 4 c (C)  $2\sqrt{2}$  c (D)  $\sqrt{2}$  c

15. Co-ordinates of the foci of the hyperbola: 
$$\frac{(x-1)^2}{16} - \frac{(y-1)^2}{9} = 1$$
(A) (1, 7) and (1, -3)
(B) (1, 3) and (1, -7)
(C) (-6, 2) and (4, 2)
(D) (-4, 2) and (6, 2)

16. Eccentricity of the hyperbola:  $4 x^2 - 8 x - 5 y^2 + 10 y = 21$  is  $(A) \frac{\sqrt{5}}{3}$   $(B) \frac{4}{3}$ 



(D)  $\frac{3}{4}$ 

Length of latus rectum of the hyperbola:  $4 x^2 - 8 x - 5 y^2 + 10 y = 21$  is 17.

$$(A)\frac{\sqrt{5}}{8}$$

(B)  $\frac{1}{2}$ 

(C) 2

(D)  $\frac{8}{\sqrt{5}}$ 

Eccentricity of the hyperbola  $\frac{(x-1)^2}{9} - \frac{(y-1)^2}{16} = 1$ ; is 18.

$$(A)\frac{5}{4}$$

(C) 
$$\frac{4}{3}$$

(D)  $\frac{3}{2}$ 

Length of latus rectum of the hyperbola;  $\frac{(x-1)^2}{9} - \frac{(y-2)^2}{16} = 1$ ; is 19.

$$(A)\frac{9}{2}$$

$$(C)\frac{7}{4}$$

(B)  $\frac{9}{4}$  (D)  $\frac{32}{2}$ 

Centre of the hyperbola  $\frac{(x-y)^2}{4} - \frac{(x+y)^2}{9} = 1$ ; is 20.

(A) (0, 0)

(C)(1,1)

#### **ANSWERS**

1.	D	2.	D	3	D	4.	С
5.	С	6.	В	7.	С	8.	В
9.	С	10.	В	11.	D	12.	В
13.	В	14.	С	15.	D	16.	С
17.	D	18.	В	19.	D	20.	Α