Note: Please attempt any 10 short questions from Question 2. Also, attempt both parts of Question 3. Cutting and removal of any content is strictly prohibited.

Q.No.1 Choose the correct Answer. $(10 \times 1 = 10)$

1. The end points of major axis of ellipse is called:			
a) Foci	b) Vertices	c) Covertices	d) Directrix
2. Asymptotes are very useful in graphing:			
a) Circe	b) Parabola	c) Ellipse	d) Hyperbola
3. The midpoint of line segment joining the foci an ellipse is called:			
a) Center	b) Vertex	c) Directrix	d) Major-Axis
4. The focus of parabola $x^2 = 4ay$ is:			
a) $(a, 0)$	b) $(-a, 0)$	c) $(0, a)$	d) $(0, -a)$
5. Slope of tangent to parabola $y^2 = 4ax$ at $(a, 2a)$ is			
a) 3	b) 2	c) -1	d) 1
6. The length of the latusrectum of the parabola $y^2 = 4ax$ is:			
a) $2a$	b) $4a$	c) $4ax$	d) $\frac{y}{2a}$
7. Directrix of the parabola $x^2 = -4ay$ is:			
a) $x = a$	b) $x = -a$	c) $y = a$	d) $y = -a$
8. The conic is hyperbola if eccentricity is:			
a) $e = 1$	b) $0 < e < 1$	c) $e > 1$	d) $e = \frac{1}{2}$
9. The equation $\frac{x^2}{a^2} - \frac{Y^2}{b^2}$ represents			
a) Circle	b) Ellipse	c) Hyperbola	d) Straight line
10. The length of the diameter of the circle $x^2 + y^2 - 4x - 12 = 0$ is:			
a) 6	b) 7	c) 8	d) 9

Q.No.2 Give the Short answer. $(10 \times 2 = 20)$

i.	Define vertex of parabola?
ii.	Find equation of the parabola whose focus id $F(-3,4)$ and Directrix $3x - 4y + 5 = 0$
iii.	Find the center and radius of the circle given by the equation $4x^2 + 4y^2 - 8x + 12y - 25 = 0$.
iv.	Drive standard equation of parabola?
v.	Show that the product of distance from the foci to any tangent to the hyperbola $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$ is constant.
vi.	Define circle?
vii.	Find the center and vertices of ellipse $9x^2 + y^2 = 18$.
viii.	Find the equation of tangent to the circle $x^2 + y^2 = 25$ at point $(4,3)$.
ix.	Find the point of intersection of the conics $x^2 + y^2 = 8$ and $x^2 - y^2 = 1$.
x.	Find the equation of parabola with Foci $(\pm 4,0)$ and vertices $(\pm 2,0)$.

Q.No.3: Write the detailed answer: $(2 \times 5 = 10)$

A.	Find the equation of the common tangents to the given conic $9x^2 - 4y^2 = 36$ parallel to $5x - 2y + 7 = 0$.
B.	Find the joint equation of the lines through the origin and perpendicular to the lines $x^2 - 2xy\tan\alpha - y^2 = 0$