ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION

FOR GOD AND COUNTRY

SOLUTIONS OF WORKSHEET-25

SUBJECT – MATHEMATICS

2nd - Term

Chapter: Co-ordinate Geometry **Class: XI**

Topic: Conic sections **Date: 28.11.2020**

Choose the correct option (1 x 15=15)

1 The vertex of the parabola $x^2 + 8x + 12y + 4 = 0$ is

(a) $(-4, 1)$ (b) $(4, -1)$ (c) $(-4, -1)$ (d) $(4, 1)$

2 The vertex of the parabola $(y-2)^2 = 16(x-1)$ is

(a) $(1, 2)$ (b) $(-1, 2)$ (c) $(1, -2)$ (d) $(2, 1)$

3 The length of the latus-rectum of the parabola $4y^2 + 2x - 20y + 17 = 0$ is

(a) 3 (b) 6 (c) 1/2 (d) 9

4 The length of the latus-rectum of the parabola $x^2 - 4x - 8y + 12 = 0$ is

(a) 4 (b) 6 (c) 8 (d) 10

5 The focus of the parabola $y = 2x^2 + x$ is

(a) $(0, 0)$ (b) $(1/2, 1/4)$ (c) $(-1/4, 0)$ (d) $(-1/4, 1/8)$

6 Which of the following points lie on the parabola $x^2 = 4ay$?

(a) $x = at^2,\ y = 2at$ (b) $x = 2at,\ y = at^2$ (c) $x = 2at^2,\ y = at$ (d) $x = 2at,\ y = at^2$

7 The equation of the parabola whose focus is $(1, -1)$ and the directrix is $x + y + 7 = 0$ is

(a) $x^2 + y^2 - 2xy - 18x - 10y = 0$ (b) $x^2 - 18x - 10y - 45 = 0$

(c) $x^2 + y^2 - 18x - 10y - 45 = 0$ (d) $x^2 + y^2 - 2xy - 18x - 10y - 45 = 0$

8 The parametric equations of a parabola is $x = t^2 + 1, y = 2t + 1$, the Cartesian equation of its directrix is –

(a) x = 0 (b) x = -1

(c) y = 0 (d) none of these.

9 If V and S are respectively the vertex and focus of the parabola $y^2 + 6y + 2x + 5 = 0$, then SV = ?

(a) 2 (b) ½

(b) 1 (d) none of these

10. The directrix of the parabola $x^2 - 4x - 8y + 12 = 0$ is

(a) $y = 0$ (b) $x = 1$ (c) $y = -1$ (d) $x = -1$

11. The equation of the parabola with focus $(0, 0)$ and directrix $x + y = 4$ is

(a) $x^2 + y^2 - 2xy + 8x + 8y - 16 = 0$ (b) $x^2 + y^2 - 2xy + 8x + 8y = 0$

(c) $x^2 + y^2 + 8x + 8y - 16 = 0$ (d) $x^2 - y^2 + 8x + 8y - 16 = 0$

12. The line $2x - y + 4 = 0$ cuts the parabola $y^2 = 8x$ in P and Q. The mid-point of PQ is

(a) $(1, 2)$ (b) $(1, -2)$ (c) $(-1, 2)$ (d) $(-1, -2)$

13. In the parabola $y^2 = 4ax$, the length of the chord passing through the vertex and inclined to the axis at $\pi/4$ is

(a) $4\sqrt{2}\,a$ (b) $2\sqrt{2}\,a$ (c) $\sqrt{2}\,a$ (d) none of these

14. The equation $16x^2 + y^2 + 8xy - 74x - 78y + 212 = 0$ represents

(a) a circle (b) a parabola (c) an ellipse (d) a hyperbola

15. The length of the latus-rectum of the parabola $y^2 + 8x - 2y + 17 = 0$ is

(a) 2 (b) 4 (c) 8 (d) 16

Answers:- 1.b , 2.a , 3.c , 4.c , 5.c , 6.d , 7.d , 8.a , 9.b , 10.c , 11.a , 12.c , 13.a , 14.b , 15.c

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