

**AKENTEN APPIAH-MENKA UNIVERSITY OF SKILLS TRAINING AND
ENTREPRENEURIAL DEVELOPMENT, KUMASI GHANA**

FACULTY OF TECHNICAL EDUCATION

END OF SEMESTER EXAMINATION – FEBRUARY 2021

INDEX NUMBER

PROGRAMME

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CLASS

COURSE CODE	MAT 124
COURSE TITLE	GEOMETRY II
DURATION	
LECTURERS	DR. EBENEZER BONYAH
INSTRUCTION(S)	ANSWER ALL QUESTIONS IN BOTH SECTIONS.

SECTION A

Write or type your answer(s) in the spaces provided

1. When the intersection of a plane with a cone is taken, the section so formed is called

2. A parabola has an axis of symmetry which either parallel to x-axis and y-axis and has

_____ possible orientations

3. The ellipse $4x^2 + y^2 - 8x + 4y - 8 = 0$ has a centre _____ and foci _____

4. The equation of an ellipse having Vertices $(0, \pm 5)$: passes through the point $(4, 2)$ is

_____.

5. A hyperbola is the set of points in a plane the _____ of whose distances from

two fixed points, called foci, is constant.

6. When the intersection of a plane and a cone happen at the vertex of the cone it is called

7. The origin of a plane of a polar coordinate system is known as _____
8. The simplified equation of the parabola that has its vertex at $(1, 2)$ and its focus at $(4, 2)$ is _____
9. If the axis of symmetry of a parabola is parallel to the y-axis and the coefficient of y is negative, then the parabola opens _____.
10. The curve of the equation $x = 2y - y^2 + 5$ opens _____.
11. The equation of a conic with vertices $(\pm 6, 0)$ and foci $(\pm 2, 0)$ is given by _____
12. The parabola $x^2 + 2x + 4y - 3 = 0$ have _____ and _____ as its vertex and foci respectively
13. A parabola which is symmetric about the y-axis, and passes through the point $(2, -3)$ has the equation _____.
14. The graph of the hyperbola $\frac{x^2}{9} - \frac{y^2}{16} = 1$ has a **transverse axis** parallel to the _____ axis
15. _____ principle in optics implies that light reflects off of a surface at an angle _____ to its angle of incidence
16. The eccentricity of a hyperbola is always _____ one.
17. A type of conic section is formed depending on the angle made by the intersection of a plane with respect to the _____ of a cone
18. The focus and the directrix of the parabola $x = \frac{-y^2}{4}$ are _____ and _____ respectively.

19. The vertex and the focus of the parabola $y^2 - 4y - 8x - 12 = 0$ are _____ and _____ respectively.

20. The point whose Cartesian coordinates is $(3, 4)$ has a polar coordinate _____

21. The Cartesian coordinates for the polar coordinate $(2, \frac{13\pi}{3})$ is given by _____

22. A cardioid is a type of _____.

23. The equation of the tangent to the parabola $x^2 = 4y$ at $(2, 1)$ is _____

24. The equation $3x^2 - xy + 12y^2 - 5x - 7y + 12 = 0$ can be classify as one of the conics, state that _____

25. The line which is tangential to the ellipse $x^2 + 5y^2 = 36$ at $(-4, -2)$ has a gradient of _____.

26. Which of the conic section's concept is applied in the development of the modern global positioning system (GPS).

27. How many Petal does the graph of the rose curve $r = a \cos 2\theta$ has?

28. What is the cartesian form of the polar equation $r = 3 \sin(\theta)$?

29. The standard equation of the hyperbola with foci $(0, \pm 13)$, the conjugate axis is of length

24 is _____

is:

[15 marks]

