GALGOTIAS UNIVERSITY

ADMISSION NUMBER												

School of Liberal Education

Bachelor of Arts Honours in Economics
Mid Term Examination - Mar 2024

Duration : 90 Minutes
Max Marks : 50

Sem VI - K1UB603B - Elementary Mathematics

General Instructions
Answer to the specific question asked
Draw neat, labelled diagrams wherever necessary
Approved data hand books are allowed subject to verification by the Invigilator

1)	Use algebraic identities to expand and simplify the expression $(2x + 3y)^2$.	K2	(2)
2)	Calculate the value of the expression $(399)^2$ using algebraic identities.	K1	(3)
3)	Outline the slope of a line, which passes through the origin, and the mid-point of the line segment joining the points P (0, – 4) and B (8, 0).	K2	(4)
4)	What is the distance between two points when a line connects them, given the points (3,−9) and (−1,6)?	K2	(6)
5)	Applying her knowledge of nutrition, Jasmine wants to use milk and orange juice to increase the amount of calcium and vitamin A in her daily diet. An ounce of milk contains 37 milligrams of calcium and 57 micrograms of vitamin A, while an ounce of orange juice contains 5 milligrams of calcium and 65 micrograms of vitamin A. How many ounces of milk and orange juice should Jasmine drink each day to provide exactly 500 milligrams of calcium and 1,200 micrograms of vitamin A?	K3	(6)
6)	Apply the following system by graphing: x- 2y = 2 x + y = 5	K3	(9)
7)	How can you demonstrate the relationship between quantity demanded and price, assuming linear demand and supply functions, with the demand function represented as q = a + bp and the supply function as q = c + dp?	K4	(8)

8) Analyse the relationship between price and supply for cherries in a large city. At a price of $1.88 per pound, the supply is 16,000 pounds, and at a price of $1.46 per pound, the supply decreases to 10,000 pounds, assuming a linear relationship. Additionally, the demand for cherries at these prices is 10,600 pounds and 12,700 pounds, respectively. Given these data, determine: K4 (12)

(A) The price-supply equation.
(B) The price-demand equation.
(C) The supply and demand at a price of $2.09 per pound.
(D) The supply and demand at a price of $1.32 per pound.
(E) Use the substitution method to find the equilibrium price and equilibrium demand

OR

Apply graphical approximation techniques on a graphing calculator to solve the following system of equations to two decimal places: K4 (12)

$5x + 2y = 15$
$2x - 3y = 16$