ELIZADE UNIVERSITY

FACULTY: HUMANITY & MANAGEMENT SCIENCES

DEPARTMENT: ECONOMICS

SECOND SEMESTER EXAMINATIONS

2013/2014 ACADEMIC SESSION

COURSE CODE: ECO 106
COURSE TITLE: ELEMENTARY MATHEMATICS FOR ECONOMICS II
DURATION: I HOUR 30 MINUTES

HOD's SIGNATURE

INSTRUCTION: Answer all questions in section A and two questions in section B

Question		Total Mark
1	Given that $A=\begin{bmatrix}1 & 0 & 4\\ 1 & -4 & 3\end{bmatrix}$ and $B=\begin{bmatrix}3 & 2\\ 7 & 6\\ 0 & 1\end{bmatrix}$ Show that AB is not equal to BA i.e $AB \neq BA$	
2	Show that the sum of geometric progression is $S_n = a\frac{(1-r)}{(1-r)}$ iff $r<i$	
3	If $Q=\begin{bmatrix}7 & 9\\ 6 & 12\end{bmatrix}$ Find Q^{-1}	
4	Suppose Y = C+I, C=a+by, I = 1_0 determine the multiplier K. if P = 0.75, what is the value of the multiplier.	
5	Find the Present value of an annuity of N10,000.00 at 10% yearly compounded for five years.	

SECTION B: ANSWER ANY TWO QUESTIONS

6 The equilibrium condition for three related markets is giver by

$2P_1+4P_2-P_3=52$

$-P_1+5P_2-3P_3=72$

$3P_1-7P_2+2P_3=10$

Use Cramer's rule to find the equilibrium price for each Market.

7 Given that the total product of Elizade University Water Project is $TI=180K^2-K^3$

a) Find the critical values and crosscheck the inflexion point

b) Test whether the functions is increasing, decreasing or stationary.

c) Test whether the functions is concave or convex at the critical value.

d) Test whether the function is maxima or minima

8a Given that the quantity demanded is $Q=1200-P^2$ determine the elasticity of demand when price is $p=20$.

b) Given the total cost $C=Q^3-18Q^2+750$. a) Derive the marginal cost and averages cost b) From the average cost and using quotient rule, derive the relationship between the average and marginal cost c) sketch the graph and explain the behaviors of the average and marginal cost.