BOWEN UNIVERSITYIWO, NIGERIA
DEPARTMENT OF ECONOMICS
B.SC DEGREE EXAMINATION, 2012/2013 SESSION
SECOND SEMESTER EXAMINATION

Course Code: ECN 124
Course Title: Introductory for mathematics for Economist II (3unit)
Date: May, 2013 Time Allowed: 2 Hours
INSTRUCTIONS: Attempt Questions 1 and any other three.

1a. Given matrix A = $\begin{pmatrix} 2 & 3 \\ 5 & -2 \end{pmatrix}$ and B = $\begin{pmatrix} 4 & 1 & -1 \\ 0 & 3 & 2 \\ 3 & 0 & 7 \end{pmatrix}$. Find the A and B inverse.

b. Given $y = x^{1/3} + 3x^{1/4} / 7x^2 - 6x^{2/3}$. Find dy/dx.

c. $\int \frac{(x-1)}{x^2-2x+1} dx$ 25marks

2. Evaluate the followings.

i. $\int 2x(x^2+1)dx$

ii. $\int 6x^2(x^3+2)dx$

iii. $\int \frac{2x^3+1}{x^4+2x} dx$ 15marks

3a. Differentiate $y = 8x^2 - 12x + 12$ from the first principle.

b. Given $y = \frac{x^3 + 5}{(3x^4 + 4x)^3} dx$ 15marks

4a. Find the number of different permutations of the letters of the word EXCELLENCE.
b. Find the number of ways a committee of 5, consisting of 3 males and 2 females, can be formed from a social club of 8 males and 7 females. 15marks

5a. Solve the equilibrium prices (P_1 and P2) for two goods that satisfy the equations; $4P_1 - P_2 = 15$ and $-2P_1 + 2P_2 = 6$
b. identify the following functions
i. $y=mx+c$ ii. $y= ax^2 + bx + c$ iii. $Y= Ax^4 + bx^3 + cx^2 + dx + e$ iv. $y = Rx^3 + Sx^2 + Tx + u$
15marks

6. Differentiate the following:

a. $y = \frac{(x^4+5x)}{(x^2+x)}$ b. $y = \frac{(2x^3+5x)}{(3x+2x+1)^2}$ c. $y = (x^4+3x)(x^2+7)$ 15marks