OLABISI ONABANJO UNIVERSITY, AGO-IWOYE, NIGERIA
FACULTY OF SOCIAL AND MANAGEMENT SCIENCES
DEPARTMENT OF ECONOMICS
2012/2013 HARMATTAN SEMESTER EXAMINATIONS
Course Code and Title: ECO 301- INTERMEDIATE MICROECONOMICS
Instruction: Attempt all questions in Sections A and B and follow instruction given in Section C.
Time Allowed: 2 Hrs.

Section A: Fill in the blanks

(i) Exchange-value is the ..... of exchange between one good and another.

(ii) The ..Total.... utility of any particular quantity of a good is the sum of the utilities of the separate units.

(iii) The state would determine all the goods to be produced and ..... in the country that operate communism.

(iv) When a commodity is a ....., it is said to be monotonically decreasing.

(v) Total demand is divided into ..... and ..... demand.

(vi) The Average Variable Cost (AFC) is ..... in nature, because it falls as output increases, but never touches the horizontal axis.

(vii) The AP_L will remain positive as long as TP_L is .....

(viii) If the production function is ..... the expansion path will be a straight line through the origin.

(ix) The law of diminishing returns operates when there is at least a ..... factor.

Section B: Answer True (T), False (F) or Ambiguous (A). Do not answer Yes or No.

Support your answers with appropriate explanation graphically, mathematically or otherwise.

(i) It is rational for a firm under perfect market to incur advertising expenses.

(ii) Ordinality of preferences assumes the assumption of constant utility of money.

(iii) Firms under monopolistic competition acts 'atomistically' by ignoring the competitors' reaction.

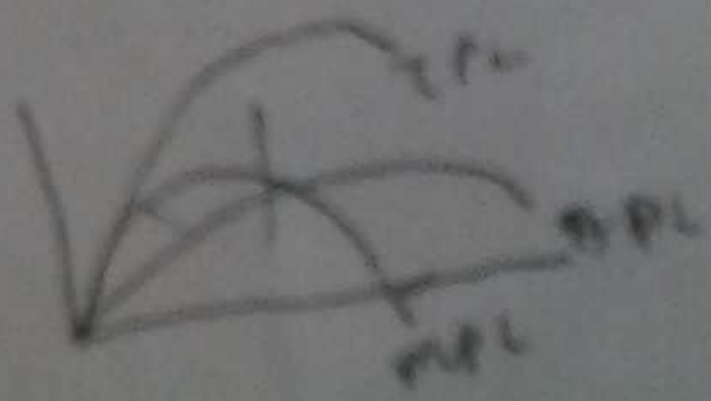
(iv) In the short run analysis, the total cost curve starts from the origin.

(v) When the MP_L and AP_L meet, the TP_L is falling

(vi) The slope of the isoquant defines the degree of substitutability of the factors of production.

(vii) Production functions are derived from the cost functions.

(viii) The price elasticity of demand for a luxury good is always elastic.



(ix) The indifference curve in the theory of consumer behaviour is analogous to isoquant in the production theory.

(x) The indifference curve analysis can be used to measure the 'consumer surplus'

SECTION C: Attempt two questions in this section

1. Given the utility function and a budget constraint of a consumer

$U = 2X_1^{2/3}X_2^{1/3}$

$P_1X_1 + P_2X_2 = M$

Where P_1 =N4, P_2 =N5, M=N2000

Derive the Ordinary and Compensated demand functions. Determine the consumer's optimal purchases of commodities 1 and 2. Does the consumer actually maximize his satisfaction?

2. Suppose two firms are faced with the following profit maximization problems:

PROBLEM I

Total cost = $1/3y^3-2y^2-10$

Price =15-y

PROBLEM II

Total cost =y^3-3y^2-12

Price=24

(a) Identify the problem corresponding to perfect market and monopoly respectively and adduce reason(s) for your answer. (b) Determine the perfect market's and monopolist's optimal level of output and profit.

3. Given the following output maximization problem for a business firm:

$y=8K^{1/2}L^{1/2}$

$wL+rK=C$

Where w=N5, r=N10, C=800

Determine

(a) the output elasticity of capital and labour

(b) the optimal combination of capital and labour

(c) the expansion path

(d) the cost function

(e) the input demand functions for capital and labour

(f) the output supply function

4. (a) A discriminating monopolist's cost function is expressed as $C = 25 + 20q$ while his demand functions in two sub-markets are $P_1 = 40 - 2.5q_1$ and $P_2 = 90 - 5q_2$ respectively determine:

(i) q_1 and q_2 (ii) p_1 and p_2 (iii) e_1 and e_2 (iv) total output (v) total profit

5. A discriminating monopolist cost function is expressed as $C = 60 + 18q$ while his demand functions in two sub-markets are: $P_1 = 180 - 1.8q_1$ and $P_2 = 250 - 3.5q_2$.

(a) Find: (i) q_1 and q_2 (ii) P_1 and P_2 (iii) e_1 and e_2 (iv) total output (v) total profit

(vi) Confirm if the SOC is satisfied.

6. In a monopolistic market, the cost function of a firm is expressed as: $C = 50q + 5q^2$ while the market demand function is $P = 350 - 3q$. Determine:

(a) The equilibrium quantity of output produced.

(b) Estimate the monopolist equilibrium profit level

(c) What would have been the equilibrium price, output and profit of the firm if the industry were to be perfectly competitive?

7. Given that the total cost function facing a perfectly competitive firm is $C = 0.043q^3 - 0.8q^2 + 10q$, derive:

(a) Level of output that minimizes AVC

(b) The equilibrium price

(c) Supply function of the firm.

8. Given the demand function for a monopolist producing in two plants as $P = 430 - 1.7q$ where $q = q_1 + q_2$ while the cost function in the two plants are: $C_1 = 35 + 20q_1$ and $C_2 = 25 + 0.9q_2^2$. Determine:

(a) The equilibrium quantities of q_1 and q_2 as well as price

(b) Total output and profit

(c) Is profit actually maximized?

9. Given that the inverse demand functions for segmented markets are: $P_1 = 40 - 2.5q_1$ and $P_2 = 90 - 5q_2$ with the cost function given as $C = 25 + 20q$, solve for:

(a) q_1 and q_2 (b) prices of q_1 and q_2 (c) elasticity of demand in the two markets (d) Total profit

(e) Confirm if the determinant of the relevent bordered Hessian matrix is positive.

10. Given that the total cost function of a firm is $C = 0.5q^3 - 3q^2 + 12q + 20$

(a) Derive the supply function of the firm

(b) What level output minimizes AVC?

(c) What is the equilibrium price?