



NATIONAL OPEN UNIVERSITY OF NIGERIA
FACULTY OF SOCIAL SCIENCES
DEPARTMENT OF ECONOMICS
2019_1 EXAMINATION

COURSE TITLE: MANAGERIAL ECONOMICS

COURSE CODE: ECO 824

UNITS: 3

TIME ALLOWED: 3 HOURS

INSTRUCTIONS: ANSWER ANY FOUR QUESTIONS. ALL QUESTION CARRY EQUAL MARKS

QUESTION 1A

State the conditions for profit maximization

6 Marks

QUESTION 1B

Given that $P = 300 - 3Q$ and $TC = 80 + 2Q^2$, find

- I. Profit maximizing level **2 Marks**
- II. Maximum profit **2 Marks**
- III. Unit price **2 Marks**

QUESTION 1C

Prove that $MR = P \left(1 - \frac{1}{ep}\right)$

5.5 Marks

QUESTION 2

Using the Lagrangian Multiplier method, optimize the profit function $z = 4X^2 - 2XY + 6Y^2$, subject to the constraint $X + Y = 72$

17.5 Marks

QUESTION 3A

What are the properties of the Cobb – Douglas Production Function?

8.5 Marks

QUESTION 3B

Given the Cobb Douglas Production Function as $Q = AK^aL^b$ calculate the following

- a) Marginal Products of Labour (MP_L) **3 Marks**
- b) Marginal Products of Capital (MP_K) **3 Marks**
- c) Marginal Rate of Technical Substitution of Labour for Capital ($MRTS_{L,K}$) **3 Marks**

QUESTION 4

i. A firm faces the Cobb Douglas production function of $Q = 12K^{0.4}L^{0.4}$, and can buy inputs [Capital (K) and Labour (L)] at interest and wage of N40 and N5 per hour respectively. If the firm has a budget of N800, what combination of K and L should he use in order to produce maximum output. **14 marks**

ii. At this equilibrium level of employment, what is the level of output and the production scale? **3.5 marks**

QUESTION 5A

What is Demand forecasting

5 Marks

QUESTION 5B

Explain the following group of consumer's goods and services in relation to income-demand analysis

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|-------------------------------|------------------|
| I. Essential Consumer Goods | 2.5 marks |
| II. Inferior Goods | 2.5 marks |
| III. Normal Goods | 2.5 marks |
| IV. Luxury and Prestige Goods | 2.5 marks |
| V. Giffen Goods | 2.5 marks |