MANICALAND STATE UNIVERSITY OF APPLIED SCIENCES

FACULTY OF AGRIBUSINESS AND COMMERCE

DEPARTMENT OF AGRICULTURE ECONOMICS AND DEVELOPMENT

MICROECONOMICS

AEDT221

SESSIONAL EXAMINATIONS
JANUARY 2021

DURATION: 3 HOURS

EXAMINER: Ms. P. Dube

INSTRUCTIONS

1. *Answer Four questions.*
2. *Start a new question on a fresh page*
3. *Total marks 100*

Questions 1

a) List and explain five properties of indifference curve map (10)

b) Lisa survives on two goods: X and Y – ham and bread. These goods are perfect complements for Lisa, he only consumes them together – one unit of ham with one unit of bread.

i. Denote with X the consumption of good X—ham and with Y the consumption of good Y—bread. (2)

ii. Determine Lisa's utility function (2)

iii. Suppose Lisa's income is $120, the price of X is $7 and the price of Y is $5. Write down Lisa's budget constraint. (3)

iv. How much of good X and good Y Lisa consumes? (4)

c) The Minister for Health is concerned about the adverse effects of bad cholesterol in ham. From his classes in economics, he remembers that there is substitution effect that may help in reduction of the consumption of ham. The ministers propose to subsidize the consumption of good Y which results in reduction of the price of good Y and now the price of good Y is only $4. The idea is that now Lisa (and others) will be substituting ham for bread.

i. Write down in words and illustrate with a relevant diagram what substitution effect in the case of convex indifference curves (2)

ii. Draw another diagram to illustrate the substitution effect for Lisa whose preferences are as above. (2)

Question 2

Nolly's kitchen is a small restaurant that cooks quarter chicken and bean stew. Nolly uses a combination of labour hrs (L) and capital services (K). Their production in Nolly's kitchen per hour is given by

$$q\,(L, K) = 3LK$$

With a marginal kitchen product of labour MPL (L, K) =3K. Their rent is currently =$10 and their wage are $0.50

a) At present, they have 10units of capital, what is the short run total product of labour? (3)
b) What is the short run marginal product of labour? (3)
c) Determine the short run average product of labour (4)
d) What is the fixed cost? (3)
e) What is the average fixed cost function? (3)
f) What is the labour requirement to produce in a given quantity? (3)
g) What is the variable cost function? (3)
h) What is their total cost? (3)

Question 3

a) Give four examples of market interactions with externalities: two positive and two negative (8)
b) In each of your examples is the outcome pareto efficient or not. Justify your answer (Assume the markets are not regulated). (8)
c) In each case explain how possible we can change the incentives of the agent so that they are closer to socially optimal outcome (9)

Question 4

a) A perfectly competitive firm produces output y using two factors of production (inputs), labour L and capital K. The firm's production function is $f(L,K)=(L^{1/2}+K^{1/2})^2$

The wage rate is w = 9 and the rental price of capital is r = 1.

i. Find the long run equilibrium price p in this market. (5)
ii. Suppose in the short run, capital is fixed at K = 1. The output price in the short run is p = 3. Find the firm's profit maximizing output in the short-run

(15)

iii. Differentiate between the dominant strategy and Nash equilibrium (5)

Question 5

a) Explain the relationship between the elasticity of demand and monopoly (5)

b) Describe the effects of per unit tax on the cost structure during the short run period and long run period (6)

c) Describe how a monopoly can take advantage of the following price discrimination degrees in a market:

i. First degree (3)

ii. Second degree (3)

iii. Third degree (3)

d) List the assumptions of the cournot's model of oligopoly (4)

Question 6

a. Draw a graph showing the short run equilibrium position of a monopolistic firm highlighting the equilibrium price, output and total and total profit or loss (10)

b. Describe five characteristics of a monopoly (10)

c. Define cross price elasticity of demand and explain when it is positive or negative (5)

END OF EXAMINATION