CHUKA   UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF MASTER SCIENCE IN ECONOMICS

MSEC 851: ECONOMICS OF PUBLIC POLICY

STREAMS: MSC (ECON) Y2S1   **TIME: 3 HOURS**

DAY/DATE : THURSDAY 15/07/2021   **8.30 A.M – 11.30 A.M**

INSTRUCTION

Answer question ONE and any other THREE questions

QUESTION ONE

Suppose a chemical company discharges its by-products to an adjacent river to its factory. An agri - processing company also located downstream along the river uses the river water to irrigate its crops. Assuming that each firm needs only one variable input to produce its product. The two firm's production functions are given by;

$$Q^A = f(x,z) = 250 + 8x - 0.5x^2 - z^2$$

$$Q^c = g(y) = 140 + 16y - 0.6y^2$$

Where Q^A is the output of apples and Q^c is the output of chemicals, x is agri – goods use of its major input water, and y is the chemical company's major input, chemical compounds. The term z is the effluent from the chemical company and an increase in effluent z reduces the output of apples. We assume that 1 unit of the input y used by the chemical company generates 1 unit of the effluent, z that is z = y. The price of water $w^x = 0$, the price of chemical compound w^y = ksh 6, the price of apples, P^A = ksh 0.8 and the price of chemical output, p^c = ksh 1.

Required :

(a) Suppose that the chemical and agri-good's company are two independent profit maximizing entities and that no regulation controls the amount of effluent discharge by the effluent company. Further, the companies have not negotiated to solve the effluent problem. Determine the amount of effluent that will be discharged into the river. Determine the pareto optimal amount of effluent. [5 marks]

(b) Suppose that the 2 firms are still independent profit maximizing entities. Assume that the chemical company has the right to pollute, but the agri-goods company is allowed to pay the chemical company to reduce the effluent to a desirable level. With zero transaction costs, is it possible to reach an agreement of effluent reduction between the two profit maximizing firms? If your answer is yes, present a payment arrangement that will result in the pareto optimal level of effluent. [8 marks]

(c) Maintaining the assumption that the two firms are independent profit maximizing agents. If agri-goods has the property rights to pollution, but creative chemical is allowed to pay agri-goods in order to discharge a desirable amount of effluent. With zero transaction costs, is it possible to reach an agreement between the two profit maximizing firms? If your answer is yes, present a payment arrangement that will result in the pareto optimal level of effluent. [8 marks]

(d) Suppose that the chemical and the agri-goods company are owned by 1 profit maximizing firm agri-chem group, determine the amount of effluent that will be discharged into the lake? [4 marks]

QUESTION TWO

(a) Explain the major contribution of Jonathan Gruber on the role of public finance and fiscal policy. [6 marks]

(b) Market failure is the economic situation defined by an inefficient allocation of goods and services in the free market. Discuss the major causes why individual incentives for rational behaviour do not always lead to rational outcomes for the group.   [9 marks]

QUESTION THREE

(a) Public policy may be seen as political system's response to demands arising from its environment in which the society operates. Explain giving relevant examples of Kenya, the system theory.   [7 marks]

(b) Governments intervene in the markets to address inefficiency. Discuss with practical examples the major objectives and different ways through which the governments want to achieve in these markets to distribute income.   [8 marks]

QUESTION FOUR

(a) Public debt has been the major concern amongst economists because it has led to negative economic growth in the macroeconomic indicators of developing countries. Explain the intergenerational equity theory of debt in an economy.   [8 marks]

(b) COVID -19 has ravaged through the major macroeconomic remedial policies of many economies. What are the most effective development oriented instruments of socio – economic policy conducted according to the concept of Keynesian economics at this downturn?   [7 marks]

QUESTION FIVE

(a) Sometimes there is a situation where government intervention doesn't lead to pareto efficient allocation of resources. Explain the major geneses of these non market failure.   [7 marks]

(b) Rent –seeking may be important for the study of private sector monopoly, but most proponents of rent –seeking would see its application to government as being far more significant. Discuss this statement in relation to public choice theory.   [8 marks]