National University of Lesotho

BA examinations

EC4317 – Industrial Organization

January 2024 **100 Marks** **3 Hours**

INSTRUCTION: Answer **question one** and **any other three** questions.

Question 1

Lesotho Pharmaceutical Corporation (LPC) is the only producer for a new anti-allergy drug. There are two consumer groups with identical size. The demand functions of the representative consumers are

$$q_1 = 120 - p_1$$

$$q_2 = B - p_2$$

with prices p_1 and p_2 for one pill and $B \leq 120$ as the second group's maximum willingness to pay. The cost function for producing the drug is $c(q) = 20q$.

a) Given that LPC has to charge a uniform price, what is the value of B for which LPC will serve both consumer groups? **[8]**

b) Now assume that $B = 70$ and LPC will serve both groups.

i. Determine the equilibrium price, the equilibrium quantities and LPC's total profit if price discrimination is not feasible. **[7]**

ii. What price per pill will be charged to members of each group if LPC is able to practice third-degree price discrimination? Calculate the equilibrium quantities and LPC's profit. **[10]**

Question 2

Innovations can have an impact on market structure, as an innovation, which is awarded with a patent, can increase the entry barriers, as the competitors are not able to find an alternative to it. This could also remove the product homogeneity in a perfect competitive market and the innovative company could raise the prices up to a monopoly level (Tirole, 1988, p.391).

Given the potential negative impacts of monopoly or firms' market power on consumers' welfare, discuss the public policy that you would recommend to counter and dampen the possible negative impacts of patents monopolies on consumers' welfare. **[25]**

Question 3

Suppose that firms 1 and 2 face market demand, $p = 100 - (q_1 + q_1)$. Firms costs are $c_1 = 10q_1$ and $c_2 = (c_2)^2$.

a) Calculate market price and each firm's profit assuming that firm 1 is the leader and firm 2 the follower. **[9]**

b) Do the same assuming that firm 2 is the leader and firm 1 the follower. **[8]**

c) How do your answers in part (a) and (b) compare with the Cournot-Nash equilibrium in this market? **[8]**

Question 4

Recently, many countries are embarking on new cultural, heritage and tourism projects and government spending in these areas in Lesotho currently, on average, is below those of other countries.

a) Explain why government intervention is advocated in the markets for public goods and goods where externalities are present. **[12]**

b) Assess the economic case for government intervention in the development of cultural, heritage and tourism projects. **[13]**

Question 5

Show that the Lerner index for a dominant firm with a competitive fringe can be written as

$$L^D = \frac{P^* - MC(Q^*)}{P^*} = \frac{S^D}{\mathcal{E}_s^f S^f + \mathcal{E}}$$

Where L^D is the Lerner index for the dominant firm, $MC(Q^*)$ its marginal cost at the profit-maximizing price (P^*) and quantity (Q^*), S^D its market share, S^f the market share of the fringe, $\mathcal{E}_s^f$ the elasticity of supply of the fringe, and $\mathcal{E}$ the elasticity of market demand. **[25]**