



UNIVERSITY OF ESWATINI

FIRST SEMESTER MAIN EXAMINATION PAPER, NOVEMBER 2019

FACULTY OF SOCIAL SCIENCES

DEPARTMENT OF ECONOMICS

COURSE CODE: ECO423

TITLE OF PAPER: HEALTH ECONOMICS I

TIME ALLOWED: 2 HOURS

Instructions

1. This paper consists of five (5) questions.
2. Answer any four (4) questions.
3. Each question carries 25 marks

Special Requirements

Scientific calculator

*Candidates may complete the front cover of their answer book when instructed by the Chief Invigilator and sign their examination attendance cards but must **NOT** write anything else until the start of the examination period is announced.*

No electronic devices capable of storing and retrieving text, including electronic dictionaries and any form of foreign material may be used while in the examination room.

DO NOT turn examination paper over until instructed to do so.

Question 1

- (a) Briefly explain the concept of Supply Induced Demand (SID). [3]
- (b) What may cause SID? Draw a graph that shows the effect that increasing competition may have on SID. [8]
- (c) Give a concise definition of Small Area Variations (SAV). [8]
- (d) What might cause SAV, and why is it a problem? What could be done to alleviate SAV? [6]

Question 2**Question 2 (I)**

- a) What are generic drugs? [2]
- b) Do generic medicines work the same as brand-name medicines? [3]
- c) Why do brand-name medicines look different from their generic versions? [3]
- d) Why do generic medicines cost less than brand-name medicines? [2]
- e) What standards must generic medicines meet to receive FDA approval? [2]

Question 2 (II)

In this question, consider the market for a pharmaceutical drug (“A”) that is only produced by one manufacturer.

- a) Suppose that the demand for drug A is perfectly elastic. What is the consumer surplus enjoyed by consumers in this market? Why might a regulatory authority not be concerned about the potential for harm caused by this manufacturer’s position as the sole producer? [3]
- b) There is only one other drug (“B”), which is made by a different manufacturer, that can be used instead of drug A to treat a common disease. Suppose that the sale of drug B is now banned by the FDA due to concerns about contamination at its manufacturer’s plant. How will this shift the demand curve for drug A? Why? [3]
- c) Assume that it is important that the disease referenced in part b) is treated promptly. Knowing this, do you think that the ban of drug B would also make demand for drug “A” less elastic? Why? [3]
- d) Given your answers to parts a) through c), do you think that the ban of drug B would change the level of concern that a regulatory authority might have about there being only one manufacturer of drug A? Why? [4]

Question 3

- a) What is the Grossman model and how helpful is the model in aiding our understanding of the production of health? Use examples in your answer. [10]
- b) Discuss important characteristics that make markets for health care services different from markets for other goods and services. [10]
- c) According to a version of the Grossman model, the (first-order) condition describing an individual's optimal choice of health stock (H) is as follows:

$$(*) \frac{WF'(H^*)}{\Pi(P, W : E)} = r + \delta$$

$F'(H^*)$ = The marginal productivity of health

$\Pi(P, W : E)$ = Lagrange multiplier (shadow price)

P = Price per unit of medical services

E = Educational level (stock of knowledge)

r = Discount rate (interest rate)

δ = Depreciation rate

Why does the wage rate (W) affect the demand for health? [5]

Question 4

Suppose my utility function is $U(w) = \sqrt{w}$, where w is my wealth in SZL1000. Suppose I face a risk p of getting sick, where $p = 19/36$. Suppose my initial wealth SZL100,000, but if I get sick, it falls to \$64,000.

- a) What is my marginal utility of wealth when sick? When well? Am I risk averse? Risk loving? Risk neutral? [8]
- b) What is my expected wealth with no insurance? What is my expected utility with no insurance? [5]
- c) What is the actuarially fair premium (expected value of my loss)? [5]
- d) What is the most I would be willing to pay to shed the risk? [7]

Question 5

In an outbreak of tuberculosis among prison inmates in Manzini in 1999, 28 of 157 inmates residing on the East wing of the dormitory developed tuberculosis, compared with 4 of 137 inmates residing on the West wing.

- i. Calculate the relative risk ratio and interpret [3]
- ii. Calculate the odds ratio and interpret [5]

- iii. Given the data, the ratios would you advise on expending any funds on an TB programme? [5]
- iv. What kind of a project would you recommend? [4]
- v. What would be the expected outcomes of the project if you would implement a project? [4]
- vi. What would be the indicator of success [4]