



Faculty of Economics and Business Universitas Indonesia (FEBUI)

Undergraduate Program (S1 Regular)

Mid Term Exam

Odd Semester 2016/2017

ECEU600101-Microeconomics 1

Maximum Time Allowed: 3 hours

No	Lecturer	Tutor
1	Alin Halimatussadiyah/Sartika Djamaluddin	Iqbal Makbul Taher
2	Dhaniel Ilyas (English)	Ruli Endepe A
3	Dwini Handayani Arianto/Niniek L Gyat	Rifqi Alfian Maulana
4	Eugenia Mardanugraha	Goldy Fariz
5	H R Achmadi	Alifa Starlika
6	Lydia Napitupulu (English)	Dewi Sukma A.
7	Maddaremmeng A. Panennungi (English)	Devin
8	M. Shauqie Azar (English)	Goldy Fariz
9	Ninasapti Triaswati (English)	Dwi Widodo
10	Niniek L Gyat	Hilda Roselina Theresia
11	Rima Prama Artha	Dimas Muh Anwar
12	Widyanti Soetjipto	Irfan Teguh Prima
13	Willem Makaliwe	Hilda Roselina Theresia

Please answer all questions below. It is not allowed to use programmable calculator!

1. Consumer Behaviour & Market Demand (25%)

Consumers have limited income to be spent on a variety of goods and services. Consumers, based on their preferences, maximize their satisfaction subject to their limited income.

- Explain how a consumer make his/her choices to a certain market basket, such as basket between two normal goods: book(s) and rice. Explain what limits his/her choices. Use a diagram (curve) to illustrate your explanation. **[5 points]**.
- Explain what is an inferior good and a Giffen good, and give an example for each. **[5 points]**.
- If there are two normal goods, X and Y, explain the two effects that exist when price of good X increases, other things being equal. Show the demand change for good X. Use a diagram (curve) to illustrate your explanation. **[8 points]**.
- Derive the demand curve from **problem c** above if it is assumed *ceteris paribus* condition. If the *ceteris paribus* condition is changed, for example

there is an increase in income, show the demand change. Use graphs to illustrate your explanation for both of the demand condition. **[7 points]**.

2. Production, Cost, Profit Maximization, and Supply in Competitive Market (25%)

A Firm produce kid toys using K amount of capital and L amount of labors. Suppose r is the price of capital (rent) and w is the price of labor (wage). The Firm operates in a perfectly competitive market. The toys have identical quality, design, etc. for all the firms in the market and using homogenous technology. It is assumed that quantity, price and all costs satisfied these conditions: Quantity (Q) ≥ 0 , Price (P) ≥ 0 , Short-run Total Cost (STC) ≥ 0 , Short-run Average Cost (SAC) ≥ 0 , Short-run Variable Cost (SVC) ≥ 0 , Short-run Average Variable cost (SAVC) ≥ 0 , Short-run Marginal Cost (SMC) ≥ 0 .

The production function is specified as follows:

$$Q = 2K^{0.5}L^{0.5}$$

- By using the concept of homogenous function, *prove* whether the production function exhibit decreasing, constant or increasing returns to scale. **[3 points]**
- Calculate the short run total cost (STC) if $K = 20$ million, $r = 4$ million rupiah per unit of capital and $w = 1$ million rupiah per labor. (Notice that the total cost is being formed by the fixed and the variable part)! **[4 points]**
- Derive the short-run marginal cost (SMC). Since the firm is operating in a perfectly competitive market, specify the firm's short-run supply curve by using its profit-maximizing condition! **[5 points]**
- By using short-run variable cost (SVC) and short-run average variable cost (SAVC), argue that the *shut down* price will equal to zero! **[3 points]**
- By using the short-run average cost (SAC), calculate the *minimum price* for the firm to avoid loss. **[4 points]**
- Let say the given price is equal to 1.5 million rupiah. Calculate the firm's profit/loss. Explain what will happen in the short-run if the firm enjoy positive/negative economic profit? What is the long-run equilibrium price and profit for all the firms in the perfect competitive market? **[6 points]**

3. Competitive Market Vs. Monopoly (25%)

You are a student of FEB UI who undertakes an internship in the Regional Development Planning Office (*Badan Perencanaan Pembangunan Daerah* or BAPPEDA) of District X. You are asked by the head of BAPPEDA to help him to analyze the price and quantity of water if the government award an exclusive contract to PT Air Segar to supply clean water in District X. According to a BAPPEDA report in the previous year, the demand and total cost functions of water is given below:

$$P = 54 - 0.0012Q \text{ dan } TC = 240,000 + 0.0015Q^2$$

where Q = number of household water supply subscribers and P = price of basic

monthly water service subscription. The head of BAPPEDA knows relatively little economics and has hired you to answer the questions listed below.

- a. What is the price and quantity produced by PT Air Segar if they are given the exclusive right as provider of clean water in Kabupaten X? **[5 Points]**
- b. To ensure the economic fairness, you need to calculate the price and quantity produced if the water is produced in a perfectly competitive market. **[4 Points]**
- c. Compare your analysis based the condition in point (a) and (b) above. You should include relevant diagrams and explain the exclusive right policy impact to the economic efficiency. **[10 Points]**
- d. Calculate the deadweight loss if PT Air Segar is given the exclusive right in the long run (hint: $MC = S$) **[6 Points]**

4. Pricing Strategy (25%)

Best Fitness Club is a monopolist company that provides fitness services to **100 clients**. Although the clients have different wealth levels, their demands for the hourly fitness services can be combined and represented by one aggregate demand function. The aggregate annual demand for fitness facing Best Fitness Club is $Q = 10,000 - 100P$ where Q is the total hours of fitness services per year and P is the hourly rate charged per person for the services (in thousand Rupiah), and the firm's total cost (in thousand Rupiah) of providing the fitness service is $TC = 80Q$, which is the firm's total cost per year. The firm wants to establish a two-part tariff monopolist scheme for charging the clients, and the fees include an annual fixed entry fee plus an hourly rate usage fee per person.

- a. Under the two-part tariff scheme: what is the firm's marginal cost of providing fitness services? **[3 Points]**
 - b. What is the demand curve for a representative client under the two-part tariff scheme? **[2 Points]**
 - c. Under two-part tariff scheme, what are the profit maximizing levels for the annual fixed entry fee and hourly rate? **[5 Points]**
 - d. What is the firm's aggregate annual profit under the two-part tariff scheme? **[5 Points]**
 - e. Suppose Best Fitness Club is a single-price monopoly on fitness services. What are the profit maximizing hourly rate (price) and quantity under a single-price monopoly? **[5 Points]**
 - f. How does the profit earned under the single-price monopoly compare to the profit earned under the two-part tariff scheme? **[5 Points]**
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