

**Problem Set of Final Exam
Microeconomics 2
Undergraduate Program in Economics**

Course : Microeconomics 2 (Advanced Microeconomics)
Instructor : Teguh Dartanto
Time : 150 Minutes

There are four problem sets.

- The first set is for AACSB's assessment. (Closed book and closed note). (30 points)
- The second, third and fourth sets are freely to use a cheating sheet. (80 points)

Note: Answer the AACSB problem set in the separated sheet.

Cheating Sheet and New Answer Sheet would be distributed after student collected their AACSB assessment.

1. **AACSB Problem Set [30 point]** Suppose that a production function takes the following form,

$$q = 2KL$$

Let r and w be the prices for input K and L respectively. Then, answer the following questions.

- Does this production function display increasing, constant, or decreasing re- turns to scale? Explain why! (5)
- Formulate the cost minimization problem! (3)
- Solve the minimization problem and derive conditional input demand for K and L! (10)
- Derive the (minimum) cost function! [hints: $c = (r, w, q)$] (7)
- Explain the properties of cost function! (5)

2. **[20 point] answer the following questions!**

- Explain the concept of *decreasing return to scale (DRTS)* of production function and what is the implication of DRTS on the average and marginal cost! Why the firm who has DRTS production technology will never be a champion in the industry? (6 points)
- Explain the concept of *irreversibility* and *possibility of inaction* in the production set, what is the implication if there are *reversibility* and *impossibility of inaction*? (6 points)
- In the general equilibrium theory, why do consumer and producer interact each other to determine the equilibrium? Explain the concept of Feasible Allocation, Pareto Optimal allocation, Core Allocation and Competitive Allocation! Could you illustrate the condition of core allocation in real life activities? (8 points)

3. **[30 point]** Consider the pure exchange economy $E = (R_+^2, U_1, U_2, w_1, w_2)$ in which

$$w_1 = (4, 2); U_1(x_1, y_1) = \sqrt{x_1 y_1}$$
$$w_2 = (2, 4); U_2(x_2, y_2) = (x_2 y_2)^2$$

- Find the Pareto Optimal Allocation! (7 point)
- Find the Core Allocation! (7 point)
- Find the Competitive Allocation! (7 point)
- Indicate them in the Edgeworth box and if an individual-1 offer (3,2) to individual-2, should individual-2 will accept or reject? Why do he/she rejects or accepts the offer? (9 point)

4. **[30 point]** a firm has the following production technology/function:

$$q(Z_1, Z_2) = \frac{Z_1^\alpha Z_2^\beta}{A}$$

where Z_1 is the input of good-1, Z_2 is the input of good-2, w_1 and w_2 are the input price of good-1 and good-2 respectively. While A is a degree of corruption (a higher A means a higher corruption level) and P is a price of product.

- Find the input demand function! (7 point)
- Find the supply function! (7 point)
- Find the profit function! (7 point)
- What is the impact of increasing in corruption level (A) on the input demand function, supply function and the profit function! (9 point)

!!!!Good Luck and I am waiting for your brightness!!!

