



Faculty of Economics and Business Universitas Indonesia (FEBUI)

Undergraduate Regular Program (S1 Regular) and

International Undergraduate Program (KKI)

Final Exam

Odd Semester 2017/2018

ECEU600101-Microeconomics 1/Intermediate Microeconomics

Maximum Time Allowed: 3 hours

No	Lecturers	Assistants
A	S1 REGULER	
1	Maddaremmeng A.P. (<i>English</i>) –A	Assyifa Szami Ilman
2	Uswatun Hasanah (<i>English</i>)-B	Agung Romy Hasiholan
3	M. Shauqie Azar (<i>English</i>)-C	M. Anggada P. Prabowo
4	Widyono Soetjipto –D	Aurora Maria Sarah
5	Willem Makaliwe (<i>English</i>)-E	Auliya Devaldi Wiratama
6	Dwini Handayani Arianto / Niniek L. Gyat-F	Restananda N. Yusacc
7	Widyanti Soetjipto-G	Ayu Dwi Putri
8	Lydia Napitupulu (<i>English</i>)-H	M. Agung Lazuardi
B	S1 KKI (<i>All in English</i>)	
1	H Achmadi R-A	Eki Setyaningtyas
2	Kenny Devita Indraswari /M. Shauqie Azar-B	Muhamad Alvin
3	Farma Mangunsong-C	Eki Setyaningtyas
4	Maddaremmeng A.P-D	Khalida
5	Surjadi-E	Ruli Endepe Alfaizin

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

Kanopi FEBUI
Unity in Development

1. Monopolistic Competition and Oligopoly (25 Points)

Suppose that two identical firms produce widgets and that they are the only firms in the market. Their costs are given by $C_1 = 60Q_1$ and $C_2 = 60Q_2$, where C_1 and Q_1 are the cost and output of Firm 1 while C_2 and Q_2 are the cost and output of Firm 2. Price is determined by the following demand curve:

$$P = 300 - Q$$

where $Q = Q_1 + Q_2$.

- Find the Cournot-Nash equilibrium! **(5 Points)**
- Calculate the profit of each firm at the equilibrium above! **(5 Points)**
- Suppose the two firms form a cartel to maximize joint profits. How many widgets would be produced? Calculate each firm's profit! **(5 Points)**
- Suppose Firm 1 were the only firm in the industry, how would market output and Firm 1's profit differs from that found in part (c) above? **(5 Points)**
- Returning to the duopoly of part (c), suppose Firm 1 abides by the agreement but Firm 2 cheats by increasing production. How many widgets will Firm 2 produce? What will be each firm's profits? **(5 Points)**

2. Market for Input (25 Points)

PT Arga Batubara is the only employer in its area. Its only variable input is labor, which has a constant marginal product equal to 5. The firm faces a supply curve for labor given by $W = 10 + L$, where W is the wage rate and L is the number of person-hours employed. This supply curve yields the marginal expenditure curve $ME = 10 + 2L$. Suppose the firm can sell all it wishes at a constant price of 8.

- What factors should PT Arga Batubara consider in deciding optimum number of labor it should hire! Add a relevant graph to your answer! **(5 Points)**
- To maximize its profit, how much labor does the firm employ, how much output does it produce and what is the wage? **(5 Points)**
- Suppose now the firm sells a special kind of coal such that it faces a downward-sloping demand curve for its output. In particular, assume that PT Arga faces the demand curve given by $P = 102 - 1.96Q$. How much labor does the firm employ and what is the wage? **(5 Points)**
- Referring to the case in item (c), how much output does it produce and what price does it set for the output? **(5 Points)**
- Assume that PT Arga still faces the demand curve $P = 102 - 1.96Q$, but now further assume that the firm has five laborers under contract to produce coal at a wage of 15. If PT Arga has the option of hiring additional laborers at a higher wage without increasing the wage to the five existing laborers, will PT Arga increase its labor force? Explain! **(5 Points)**

3. General Equilibrium and Economic Efficiency (25 Points)

Consider an Edgeworth box economy with two goods X and Y and two consumers, i.e. Ani and Budi. The initial endowment of Ani for X and Y are 2 and 2, respectively and her utility function is $U_A(X_A, Y_A) = X_A Y_A$. While the initial endowment of Budi for X and Y are 3, and 3, respectively and his utility function is $U_B(X_B, Y_B) = X_B Y_B^2$.

- Show their initial endowments and utility functions in Edgeworth box diagram. Please put all relevant symbols and numbers in both vertical and horizontal axis! **(5 Points)**
- Determine *Marginal Rate of Substitution* (MRS) of Ani and Budi! **(5 Points)**
- By combining the information on their initial endowments and MRSs in point (b), will an exchange between Ani and Budi occur? Why? **(5 Points)**
- In this case, will the exchange satisfy the Pareto Optimum condition? Why? **(5 Points)**
- Find the contract curve that equates both MRSs! **(5 Points)**

4. Uncertainty and Asymmetric Information (25 Points)

Rama and Sinta are a newly-married couple planning to buy a villa in Bali, which they are planning to rent to tourists to get rental income. After conducting market research, they conclude that there are two types of villas in Bali: 1) beach front villas which face a risk from severe flooding (due to sea level rise), and 2) hill side villas with no risk from flooding. Due to global warming, researchers predict that in the next 20 years, there is a 15% chance that Bali beach front properties will experience a severe flood from sea level rise.

Rama and Sinta estimated that if they invest in a beach front villa now, their rental income will be US\$3 million in 20 years if there is no flood (in real terms, net of operating costs); however if a severe flood occurs, they will only earn a net rental income of \$1.5 million and the cost in damages and renovation will be \$0.5 million. On the other hand, normally hill side villas will yield a return of \$1 million over 20 years, but there is a 50% chance of earning \$3 million if, due to global warming, tourists increasingly prefer hill side villas.

- Calculate the expected wealth from purchasing a beach front villa! **(5 Points)**
 - Calculate the expected wealth from purchasing a hill side villa! Assuming the price is the same, which type of villa should the couple buy? **(5 Points)**
 - To cover against damage from a severe flooding, the couple can purchase flood insurance for the beach front villa. The insurance will cost \$0.2 million for a 20-year coverage, but will cover only damages to the building (and not the rental income). Should the couple purchase the flood insurance? Explain! **(5 Points)**
 - There is disagreement amongst researchers about the risk of flooding, with some climate models predicting the chance of severe flooding much higher than 15%. What is the maximum rate of flooding risk for which a beach front villa is preferred compared to a hill side villa? Assume no insurance is purchased. **(5 Points)**
 - A risk free alternative is buying rental property in Jakarta, which will yield a return of \$2.5 million over the next 20 years. Since Rama is risk averse and Sinta is a 'risk lover', they can not agree on which alternative to choose. Explain why, using graphs! **(5 Points)**
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