

MANAGERIAL ECONOMICS
Fall 2013 – TERM EXAMINATION II

Write your name on this question paper as well as your answer book. There are 6 sections. You are required to answer 6 questions in total. Read the instructions for each section carefully. In your answer booklet, make sure you specify which question you are responding to. Marks for each question are in parentheses. **YOU ARE GIVEN 85 MINUTES TO ANSWER THIS EXAM, BUT YOU SHOULD BE ABLE TO COMPLETE THE TEST IN HALF THIS TIME. TIME MANAGEMENT IS OF THE ESSENCE IN EVERYTHING.**

SECTION I (4 marks) Answer only ONE (1) question

1. (p. 95) An individual faces two alternatives for an investment: Asset A has the following probability return schedule:

<u>Probability of return</u>	<u>Return (yield) %</u>
.25	11.0
.20	10.5
.20	9.5
.15	9.0
.10	6.5
.10	-1.0

Asset B has a certain return of 8.0%. If the individual selects asset A does she violate the principle of risk aversion? Explain.

2. (p. 95) An individual faces two alternatives for an investment. Asset 'A' has the following probability of return schedule:

<u>Probability of return</u>	<u>Return (yield) %</u>
.25	15.0
.20	12.0
.20	10.0
.15	9.0
.10	7.5
.10	0.0

$$Ret A = 10.25\%$$

B

Asset 'B' has a certain return of 10.25%. If this individual selects asset 'A' does it imply she is risk averse? Explain yes, it does – Risk neutral

SECTION II You are required to answer this question (7 marks)

3. You are the manager of an imperfectly competitive firm, and your demand and cost functions are given by $Q = 100 - (1/10)P$ and $ATC = (10000/Q) + 500$

- a. determine the profit-maximizing price and level of production
- b. calculate the firm's profits
- c. Calculate the Lerner's index, the absolute mark-up pricing, and interpret the result
- d. Suppose your industry becomes a perfectly competitive one, how would that change your profit maximizing output and price? Calculate.
- e. Calculate the Lerner index and compare it with the Lerner index of (c) above.
- f. Based on (c), assuming costs do not change, what price strategy should the manager adopt to increase profit?
- g. Explain clearly what would happen if the firm were to price discriminate instead.

SECTION III (8 Mark) Answer only ONE (1)

4. Factor prices are $w = r = 10$. In Mexico, the wage is half that in the United States but the firm faces the same cost of capital. What are L and K, and what is the cost of producing $q = 100$ units in both countries?
5. A U.S. apparel manufacturer has estimated its production from two plants that takes the following forms:
 $\ln(\text{output}) = 9.8 + 0.7\ln K + 0.2\ln L$
 $\text{Output} = 32,000 + 1000K + 200L$,
 with all coefficients significant at the 5 percent level. Calculate
 - (a) The marginal physical product of labor and the marginal product of capital
 - (b) The output elasticity of capital and labor and
 - (c) Determine the types of returns to scale
 - (d) What happens to marginal physical product of capital if labor increases?

SECTION IV (8 Marks)

You are required to answer this question.

6. The sales manager of Region 3 of company X needs your help. She had asked an intern to determine the impact of various marketing strategies on the demand for product Z for the region. The intern did a good job in producing the summary output below but had to go back home due to the marriage of her sister with Prince Charming. The manager's meeting with the Board is within an hour, and she cannot make sense of the numbers. She would like to know:
 - a. Whether it is rewarding for the company to spend money on television advertisement. (1 mark)
 - b. Whether the company should spend money in every possible marketing strategy, as per the findings. (4 marks)
 - c. If the company does not have enough money, where she can save on her advertising budget and whether there are any possible issues she should be aware of? Your complete advice is needed. (3 marks)
 - d. What to do about the great upcoming annual event in the Region that will bring people from all over the world.

SUMMARY OUTPUT					
Regression Statistics					
Multiple R	0.908				
R Square	0.825	82% ✓			
Adjusted R Square	0.797				
Standard Error	0.059				
Observations	30				
Coefficients					
		Standard Error	t Stat > 2	P-value < 0.05	
Intercept	-3.24	3.74	× -0.87	0.394	
Flyer-in-the-mail	2.020	0.44	✓ 4.60	0.000	
Door-to-Door	-0.583	0.05	✓ -11.66	0.000	
Radio	1.03	0.70	× 1.48	0.14	
Television	3.5	0.50	✓ 7.00	0.000	
Sponsoring Events	0.332	0.10	3.33		

$$= \frac{0.332}{0.10}$$

SECTION V (6 Marks) Answer only ONE (1) question. Hint: each question can be answered with only one sentence.

- In the community where you live, there are only two banks. The First Imperial Bank operates out of a granite-faced building on Main St. The interior of the branch has marble floors, brass doors and fittings and crystal chandeliers. Across the street, in a vacant lot sits a trailer with a sign that reads "Mike's Bank and Espresso Bar". In the absence of deposit insurance, which bank do you deposit your paycheck in and why?
- Mary Jones is the president of a local bank. She knows that half of the loan applicants in town she would classify as high risk and the other half as low risk. She observes that the other banks in town charge two different interest rates, a lower rate for low risk borrowers and the higher rate for high risk borrowers. She decides that to have an advantage over the other banks she will offer an average rate to everyone. Isn't this a great idea? Why or why not?

SECTION VI (6 marks) Answer only ONE (1) Hint: a maximum of 3 lines with relevant calculations should suffice for each question.

- Your firm is considering a potential investment project, and your finance group has prepared the following estimates: an NPV of \$10million if the economy is strong (30% probability), and NPV of \$4 million if the economy is normal (50% probability), and an NPV of -\$2million if the economy is poor (20% probability). What is the expected value of NPV for this project and what is the risk associated? Is the risk meaningful? Why or why not?
- You have two types of buyers for your product. The first type values your product at \$10; the second type values it at \$6. Forty percent of buyers are of the first type (\$10 value); 60% are of the second type (\$6 value). What price maximizes your expected profit? 4 3.60