OTTO VON GUERICKE UNIVERSITÄT MAGDEBURG FACULTY OF ECONOMICS AND MANAGEMENT

Course : Microeconomics (11062/5024)
Term : Winterterm 2010
Examiner : Dr. Sönke Hoffmann, VWL3
Date : 25.07.2011

Repeat Examination

First name: .....

Last name: .....

Matr.–No.: ⌴ ⌴ ⌴ ⌴ ⌴ ⌴

- **Available time:** 120 minutes
- **Achievable points (max.):** 120 points
- **Permitted aid(s):**
  - Pocket calculator *without data storage and communication capabilites*
- **General information:**

1. You have 20 questions all together. In all questions *one out of four* answers is correct.
2. In each question points are given as follows:

	You mark...		
	...(only) correct	...(only) wrong	...correct and wrong/nothing
points	see Problem	0	0

3. Feel free to use the empty space on the present exam for your personal calculations or notes. But note that *whatever you write on these pages will be ignored during correction!* Only the answer sheet will be evaluated.
4. Points given for correct solutions correspond to the processing time assigned (in minutes).
5. Return *all* the paper you received (without exception).

GOOD LUCK!

1. *(4 points)* Because resources are limited ...

   (a) ... only the very wealthy can get everything they want.

   (b) ... firms will be forced out of business.

   (c) ... the availability of goods will be limited but the availability of services will not.

   (d) ... people must make choices.

2. *(4 points)* Which of the following is an example of scarcity?

   (a) If you choose to play video games you will not have as much time for exercise.

   (b) If a city uses an acre of land to build a park there will be less land for houses.

   (c) If I decide to buy a new car I may not have enough money to go away on vacation this year.

   (d) All of the above are examples of scarcity.

3. *(4 points)* Which of the following is *not* an example of a question answered by positive economics?

   (a) How will an increase in the price of gasoline affect taxi drivers?

   (b) What fraction of an income-tax cut will be spent on consumer goods?

   (c) Should the government increase the minimum wage?

   (d) How will an increase in interest rates affect investment in factories?

4. *(4 points)* Mark quit his job as a salesman where he made €43.000 per year to start his own t–shirt making business. His business expenses are €6.000 per year on rent, €12.000 per year on supplies, and €4.000 per year on part–time help. As for his personal expenses, his apartment costs him €4.800 per year and his personal bills are an extra €1.200 per year. What is Mark's opportunity cost of running the business?

   (a) €65.000

   (b) €57.000

   (c) €71.000

   (d) €43.000

5. *(4 points)* Suppose that the quantity supplied of pizza exceeds the quantity demanded for pizza. We would expect that ...

   (a) ... the price of pizza will increase.

   (b) ... the price of pizza will decrease.

   (c) ... the supply will decrease to meet the demand.

   (d) ... the demand will increase to meet the supply.

6. *(6 points)* Suppose that the demand for pizza is given by $x^D(p) = 36 - p$ and the supply is given by $x^S(p) = p - 12$. If the price of pizza is €20, which of the following is true?

   (a) There will be excess supply of 8 pizzas.

   (b) There will be excess demand of 8 pizzas.

   (c) There will be excess demand of 20 pizzas.

   (d) The market is in equilibrium.

7. *(4 points)* Suppose that there is only one seller in the widget industry. If that seller faces a straight line, downward sloping demand curve $x(p)$, at which point would the seller's *total revenue* be maximized? (Hint: price elasticity of demand is $\varepsilon_p(x) = x'(p) \cdot \frac{p}{x(p)}$)

   (a) At the highest point on the demand curve, where price is the highest.

   (b) At a point high on the demand curve, but not at the very top.

   (c) At the midpoint of the demand curve, where elasticity is unitary.

   (d) At a point low on the demand curve, but not at the very bottom.

8. *(4 points)* A good is said to be *inferior* if ...

   (a) ... it is of low quality.

   (b) ... consumers buy less of it at a higher price.

   (c) ... it has a negative income elasticity of demand.

   (d) ... it has many substitutes.

9. *(4 points)* Suppose that Anne buys three pairs of designer shoes at €200 a pair. If the price equals the amount Anne is willing to pay for the third pair, then ...

   (a) ... she cannot have earned any consumer surplus.

   (b) ... she might have earned some consumer surplus on the first two pairs of shoes.

   (c) ...she would have earned consumer surplus if she bought one more pair of shoes.

   (d) ... she would have earned more consumer surplus if she bought one fewer pair of shoes.

10. *(4 points)* Which of the following statements is *incorrect*?

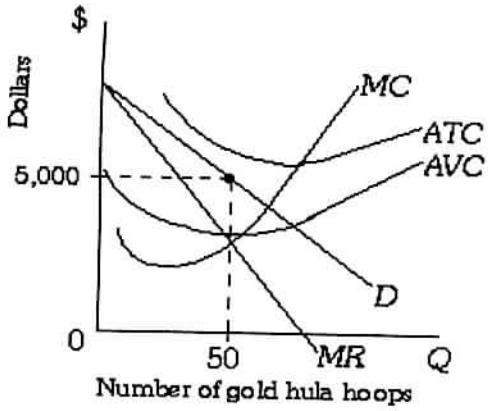
    (a) A consumer's budget line includes all the combinations of goods that exhaust the consumer's budget.

    (b) The slope of the budget line reflects the market trade–off between the two goods.

    (c) The slope of the budget line is the opportunity cost to a consumer of one good in terms of the other good.

    (d) The budget line represents what the consumer wants to do.

11. *(4 points)* Refer to the following Figure:



The Exclusive Gift Company has a monopoly over the sale of gold hula hoops. This company is currently selling 50 gold hula hoops at a price of \$5000. You are hired as an economic consultant to this company. You should advise this monopolist to ...

(a) ... shut down in the short run and exit the industry in the long run.

(b) ... produce in the short run and expand capacity in the long run.

(c) ... produce in the short run but exit the industry in the long run if conditions do not change.

(d) ... shut down in the short run but expand capacity in the long run if conditions do not change.

12. *(10 points)* Let $p = (p_1, p_2)$ be two prices and m the income. Jackie's utility function is $u(x_1, x_2) = x_1^{0.6} x_2^{0.4}$. What is the *Engel Curve* of good 1?

(a) $x_1(m, \bar{p}_1) = \frac{3}{5}\frac{m}{\bar{p}_1}$

(b) $x_1(m, \bar{p}_1) = \frac{3}{5}\frac{\bar{p}_1}{m}$

(c) $x_1(m, \bar{p}_1) = \frac{5}{3}\frac{m}{\bar{p}_1}$

(d) $x_1(m, \bar{p}_1) = \frac{5}{3}\frac{\bar{p}_1}{m}$

13. *(10 points)* Fred's utility function is $u(x_1, x_2) = \ln(x_1 + x_2)$. What is a correct statement?

(a) For all p_1 and p_2 Fred should consume some of both goods.

(b) For all p_1 and p_2 Fred has got exactly one best choice.

(c) The indifference curves are non–linear.

(d) For all $p_2 > p_1$ it is best to consume only good 1

14. *(10 points)* Let $p = (p_1, p_2)$ be two prices and m the income. Now consider the indirect utility function given by $v(p, m) = \frac{m}{p_1 + p_2}$. What are the demand functions (Hint: Roy's identity)?

(a) $x_1(p, m) = x_2(p, m) = \frac{m}{p_1 + p_2}$

(b) $x_1(p, m) = x_2(p, m) = \frac{2m}{(p_1 + p_2)^2}$

(c) $x_1(p, m) = \frac{2m}{(p_1 + p_2)^2}$ and $x_2(p, m) = \frac{m}{p_1 + p_2}$

(d) $x_1(p, m) = \frac{2m}{(p_1 + p_2)^2}$ and $x_2(p, m) = \frac{m^2}{2(p_1 + p_2)}$

15. *(8 points)* What is the expenditure function in Problem 14?

(a) $e(p_1, p_2, m) = 2m(p_1 + p_2)$

(b) $e(p_1, p_2, \bar{u}) = \bar{u}(p_1 + p_2)$

(c) $e(p_1, p_2, m) = 2\sqrt{m(p_1 + p_2)}$

(d) $e(p_1, p_2, \bar{u}) = \bar{u}(p_1 + p_2)$

16. *(6 points)* The inverse demand curve a monopoly faces is $p(x) = 100 - x$. The firm's cost curve is $C(x) = 10 + 5x$. What is the maximal profit?

(a) 2264.25

(b) 2642.25

(c) 4264.25

(d) 6242.25

17. *(12 points)* A duopoly faces a market demand of $p(x) = 120 - x$. Firm 1 has a constant marginal cost of $MC_1 = 20$. Firm 2's constant marginal cost is $MC_2 = 40$. Calculate the market price in a Cournot equilibrium.

(a) $p = 60$

(b) $p = 70$

(c) $p = 80$

(d) $p = 90$

18. *(4 points)* Two computer firms, A and B, can choose to produce either a fast, high–quality system (H) or a slow, low–quality system (L). Market research indicates that the resulting profits are given by the following payoff matrix:

	Strat.	B			
		$H, (q)$		$L, (1-q)$	
A	$H, (p)$	30	30	50	35
	$L, (1-p)$	40	60	20	20

What are the pure–strategy Nash equilibria $NGG = (p, q)$ of this game, if p is the probability that A chooses H and q is the probability that B chooses H?

(a) $NGG_1 = (1, 1)$ and $NGG_2 = (0, 0)$

(b) $NGG_1 = (1, 1)$ and $NGG_2 = (0, 1)$

(c) $NGG_1 = (0, 0)$ and $NGG_2 = (0, 1)$

(d) $NGG_1 = (0, 1)$ and $NGG_2 = (1, 0)$

19. *(6 points)* A firm uses 4 inputs to produce 1 output. The production function is $f(x_1, x_2, x_3, x_4) = \min\{x_1, x_2\} + \min\{x_3, x_4\}$. What kind of returns to scale does this technology exhibit?

(a) Increasing

(b) Decreasing

(c) Constant

(d) Can not be determined without further information.

20. *(8 points)* John lives on ale and chips, that he buys at prices $(p_a, p_c) = (2,2)$, where p_a is the price of a pint of ale and p_c the price of one tray of chips (all prices in Euro). In particular we observe that, at previous prices, John buys one pint of ale and two trays of chips for which he spends his whole income. This morning John received good news and bad news: his income is now €10, but the price of chips has changed to $p_c' = 4$. Find the area of this morning's choices which satisfy the weak axiom of revealed preference. The size of that area is ... (Hint: Draw the budget lines.)

(a) 0

(b) 1

(c) 2

(d) 3