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FEB EXAM

D0H52A/D0T96A – Managerial Economics

(ANSWERS TO SOME SAMPLE EXAM QUESTIONS)

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Instructions for students:

- Please write your identification info (student name, nr) on every page
- Maximum duration: 3 hours (from official starting hour of the exam)
- Exam type: written, closed book
- Only the following auxiliary materials are allowed:
  - Writing tools
  - Dictionary
  - Non-graphic calculator
- Students are allowed to use their own pen, but should only use the paper provided by the university. Other papers, notebooks, etc. are not allowed.
- Mobile telephones and electronic devices should be handed to the supervisors who will keep them for you until the end of the exam. All material such as jackets, backpacks, books and own paper should be left at the back or the front of examination room.
- For any irregularity of a student, all articles in the irregularities-section of the exam regulations apply.

- Carefully read the question before you start writing
- Answers can be given in English or Dutch.
  - Answers on the Multiple Choice Questions should be indicated on the electronic answering sheet.
  - Answers on the quantitative and qualitative questions should be given on the attached sheets in the answering boxes. Only answers within these spaces will be read.
- If you believe that some information is missing to answer a question, clearly specify your assumption and complete the question.
- Before starting, please check that you have 7 pages (excluding the two front pages) with 10 MPC questions, 2 qualitative and 2 quantitative questions. Immediately ask the surveyor for another bundle if this is not the case. Please do not detach any pages from this bundle.
- There are 32 points to be gained.

Good luck!

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Multiple Choice Questions

SERIES 1 (REEKS 1)

Clearly indicate the correct answer on the electronic answering sheet.
Do not forget to indicate your SERIES NUMBER (nummer vragenreeks), 1, in the upper right corner of the electronic answering sheet!

Correct way of answering:

Not like this:

If you change your mind:

If you do not know the correct answer: indicate Ⓧ

Please note that only one answer is correct. You are punished for guessing, which means that you get +1 for every question that you answer correctly, 0 if you leave it blank and -1/3 if your answer is wrong.

1. A monopolist facing two markets with different price elasticities will
    a. price independently of the difference in the price elasticity
    b. use a uniform price
    c. set a higher price in the market with the higher price elasticity
    d. set a higher price in the market with the lower price elasticity

2. In indirect segment discrimination, the firm
    a. utilizes the incentive compatibility constraint
    b. needs to be able to prevent resale
    c. uses differential prices within different identifiable customer segments
    d. forces low valuation consumers to buy a low-quality good

3. For there to be economies of scale, it is **necessary** that
    a. there are fixed costs of production
    b. there are decreasing marginal costs
    c. there are economies of scope
    d. none of the above

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4. A monopolist faces two markets with the following demand curves:
   Market A: $Q_A = 10 - P_A$
   Market B: $Q_B = 6 - P_B$
   The marginal cost of production is constant and equal to one. The optimal price(s) is/are:
   a. $P_A = P_B = 8.5$
   b. $P_A = P_B = 8$
   c. $P_A = 4.5$ and $P_B = 2.5$
   d. $P_A = 5.5$ and $P_B = 3.5$

5. A start-up company with zero sales and profits is thinking of starting an R&D project. The cost is 1 Mio euro. The project succeeds, i.e., a new good is invented, with probability 0.5. If the project fails, no new product is invented and nothing useful comes out of the project. Obviously, not starting the project yields zero profit. To sell anything at all, an advertising campaign is needed. An advertising campaign costing 2 Mio euro will yield profits (gross of advertising expenditure) of 5 Mio euro if the R&D project succeeded. The question is when to commit to the advertising campaign. How much at most would the firm be willing to pay for the ability to decide whether or not to advertise ***after*** it knows the outcome of the R&D project, instead of committing to advertising ***before*** it knows the outcome of the R&D project?
   a. 1 Mio euro
   b. 0.5 Mio euro
   c. 2 Mio euro
   d. 3 Mio euro

Solutions of the MPC Questions:

1 C

Note that we are working here with the exact values of price elasticity, and not the absolute!

2 A

3 D

4 D

5 B

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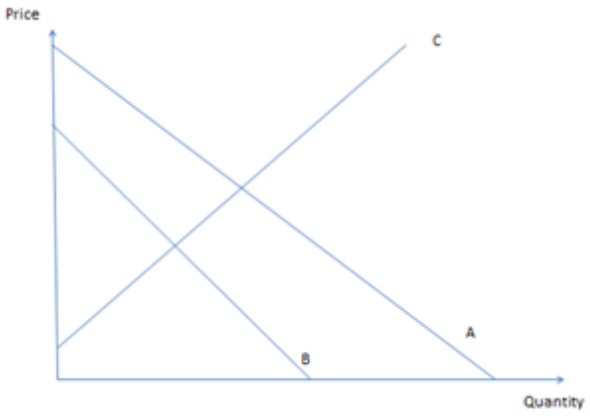
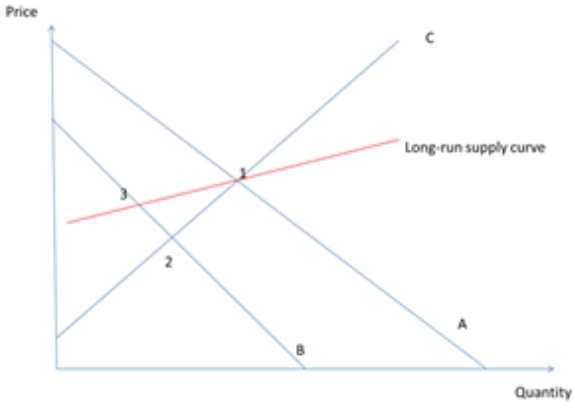
Qualitative Questions

1. The following diagram depicts the situation in the international ship freight market which is competitive. The downward sloping curve "A" is the (initial) demand curve. The upward sloping line "C" is the short run supply curve. Explain what would happen in the short and in the long run if demand contracted from curve "A" to curve "B". Explain the difference (or the lack of it) between the short and the long run. You can use the figure to clarify your answer **(5 points).**

   Note that the graph on the left is the one as indicated on the exam; the right one denotes how you could have used the diagram in your answer.





If the long-run supply curve is added to the diagram, it needs to cross the demand curve 'A' at the same point as the short-run supply curve

Short run: prices fall and demand falls to the point where the short run supply curve and the new demand curve 'B' intersect. (figure point 2) Here, price is equal to short run marginal cost. Only those firms who can cover their variable costs will produce.

In the long run, the industry would lose capacity. Those producers who cannot cover their fixed costs will exit and the new long run equilibrium will be found where the long run supply curve intersects the new demand curve (figure point 3)

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2. Explain the differences in outcome when a monopolist uses a uniform price and when he is able to practice complete price discrimination (CPD) **(6 points).**

- In CPD, consumers with different WTP have different prices
- In CPD, all customers with WTP ≥ MC will buy
- In CPD, all consumers are indifferent between buying and not buying
- In CPD there is no monopoly deadweight loss
- In CPD the outcome is as efficient as with perfectly competitive markets
- In CPD the monopoly makes larger profits than with uniform pricing
- In CPD the monopoly gets all the surplus

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Quantitative Questions

1. Bundling. Consider the following situation. You need to decide how to price the two channels offered by your company, "High-tech" providing programs on engineering, science and technology, and "Wildlife" providing, well, wild-life programs. You know that you have two customer groups, "Geeks" and "Regular". For every customer group, the number of customers and their willingnesses to pay are displayed in the table below. Explain how you would price and why? What are your profits from the different pricing strategies? Your marginal cost is zero for both channels **(7 points).**

		products	
	Number of customers	High-tech	Wildlife
Geeks	3000	15	4
Regular	10000	3	8

a) Three options: uniform pricing, pure bundling and mixed bundling

b) Uniform pricing: different price for each channel . You can either set price for High-tech at 15 and get only Geeks or a price of 3 and get all customers. The former gives you 15*3000 = 45000 profit, the latter 3*13000 = 39000. So you set the price for High-tech at 15.
For Wildlife, the optimal price is either 4 or 8. If 4, the profits are 4*13000 = 52000; if 8 the profits are 8*10000 = 80000. Thus the optimal uniform price for Wildlife is 8.
Total profits from uniform pricing are 45000 + 80000 = 125000

c) Pure bundling: can either set price at 19 and get only the 3000 geeks for profit of 19*3000 = 57000 or set price at 11 and get both customer groups for profit of 11*13000 = 143000.
Thus, optimal pure bundling price is 11 and profit is 143000

d) Mixed bundling. The maximum price you can charge for the bundle is 19, in which case only Geeks buy it. They will only buy it if the price for the single channel(s) leaves them no surplus. As Regulars are willing to pay 8 for Wildlife, you price it at 8. You price High-tech at 15 (or more) to prevent anybody from buying it. Then your profits are 3000*19 + 10000*8 = 137000.
The other alternative is to price the bundle so that Regulars will buy it, i.e. at 11. But then you would have to price High-tech low enough to prevent Geeks from buying it. As their benefit from buying the bundle at price 11 is (15+4) – 11 = 8, you could only price High-tech at 15-8 = 7. Thus your profits would be 7*3000 + 11*10000 = 131000.
Thus the optimal mixed bundling strategy is to price the bundle at 19, the High-tech at 19 or more and Wildlife at 8, for profits of 137000

e) You choose pure bundling, set the price of the bundle at 11 and make profits of 143000