



**UNIVERSITÉ
DE GENÈVE**



SECTION DES SCIENCES ÉCONOMIQUES
UNIVERSITÉ DE GENÈVE

INTRODUCTION TO MICROECONOMICS EXAM

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FAMILY NAME (capital letters):

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Given name:

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Student Number:

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Total number of pages: 10.

Duration of the exam: 3 h. (30 questions)

Authorized material: none (calculator not authorized).

Instructions to answer multiple choice questions

- ★ The answers sheet is stapled at the end of the exam. Please detach properly.
- ★ On the answers sheet, write down your family name, given name and “code candidat” (= 8 digit student number without scores) properly and in capital letters.
- ★ The answers sheet must absolutely be handed in at the end of the exam. The questionnaire can be retained.
- ★ On the answers sheet, the box corresponding to the chosen answer (A to D) must be checked or filled properly with a dark blue or black pen.
- ★ If necessary, make corrections carefully. The answer must be clearly identifiable and unique. If this is not the case, it will be counted as wrong.

Example:

Fine		Bad	
	A B C D		A B C D
Q1	☐ ☒ ☐ ☐	Q16	☐ ☒ ☒ ☐
Q2	☐ ☐ ☒ ☐	Q17	☐ ☒ ☐ ☐
Q3	☐ ☐ ☐ ☒	Q18	☐ ☒ ☐ ☒
Q4	☐ ☐ ☒ ☐	Q19	☐ ☐ ☐ ☐
Q5	☐ ☒ ☐ ☐	Q20	☒ ☒ ☐ ☐

In order not to waste your chances, answer all questions.

There are no negative points.

There is only one correct answer.

ATTENTION:

Unless otherwise specified, supply and demand are represented by curves with the usual slope.

Question 1

Sophie wants to renew her wardrobe. To do so, she is ready to pay 70 CHF for the first dress, 30 CHF for a second one, and 10 CHF for a third one. If the price of a dress is 35 CHF:

- (a) Sophie will buy three dresses.
- (b) Sophie's consumer surplus will be equal to 35.
- (c) Sophie's consumer surplus will be equal to 70.
- (d) Sophie's total expenditure will amount to 70 CHF.

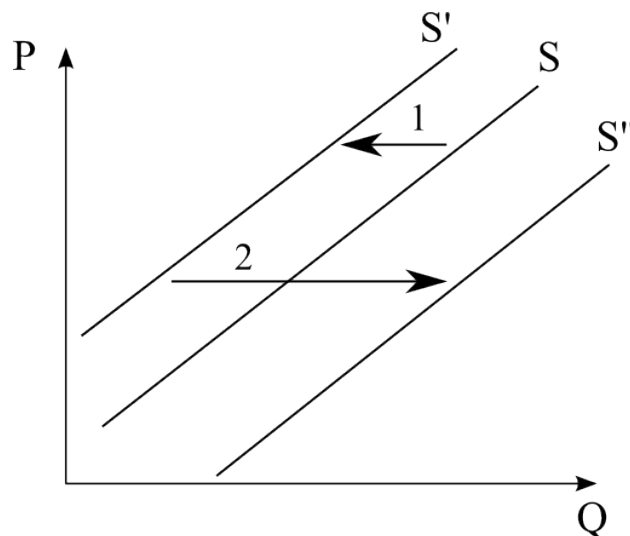
Question 2

What can be predicted with certainty following the reduction in the price of a factor of production of good X that takes place at the same time as the increase in the price of another good whose consumption is complementary to the consumption of X ?

- (a) The equilibrium price of X will fall.
- (b) The equilibrium quantity of X will rise.
- (c) At the initial price of X , there will be excess demand.
- (d) The equilibrium quantity of X will stay constant.

Question 3

On the market for potatoes, we record two successive displacements of the supply function:



Among the following propositions, which one could explain these two successive displacements of the supply function?

- (a) Displacement 1: a reduction in the price of bread, a substitute good (to potatoes); Displacement 2: very favorable meteorologic conditions.
- (b) Displacement 1: unfavorable meteorologic conditions; Displacement 2: the introduction of a new technology that increases the productivity of the potato harvest.
- (c) Displacement 1: a reduction in consumers' revenues; Displacement 2: a reduction in the price of agricultural land.
- (d) Displacement 1: the use of new, more resistant seeds; Displacement 2: a reduction in payroll taxes paid by owners of agricultural land for their employees.

Question 4

On the market for goods X and Y , demand for X (Q_X^D) and supply of good Y (Q_Y^S) are given by:

$$Q_X^D = 700 - 2P_X - P_Y + 0.5R \quad \text{and} \quad Q_Y^S = -100 + 2P_Y,$$

where P_X and P_Y represent the price of goods X and Y , and R represents consumers' revenues (income).

At the market equilibrium, we have that

$$R = 200 \quad \text{and} \quad Q_Y^S = 300.$$

The price elasticity of the demand for X is equal to -0.5 in equilibrium. Which of the following propositions is FALSE?

- (a) The quantity demanded of good X is equal to 400.
- (b) Good X is a normal good of first necessity.
- (c) Goods X and Y are complements.
- (d) The price elasticity of the supply of Y is equal to $\frac{3}{4}$.

Question 5

Knowing that the market for good X is characterized by a demand function with slope -1 and a supply function passing through the origin with slope 1, which of the following is FALSE?

- (a) The equilibrium price and quantity are the same.
- (b) The price elasticity of demand is equal to one in absolute value.
- (c) Following an upward shift of the supply function, the new equilibrium will be in the inelastic portion of the demand function.
- (d) A parallel shift of the demand function will neither affect the price elasticity of demand or the price elasticity of supply at the new equilibrium.

Question 6

On the market for flat TV screens, we find that following a 20% decline in prices, the amount traded has doubled. We can therefore say that the price elasticity of demand (in absolute value) is equal to:

- (a) 10.
- (b) 5.
- (c) 0.5.
- (d) 0.2.

Question 7

The government decides to introduce a tax on gasoline, paid by producers, equal to 1 CHF per liter. Which of the following propositions is true?

- (a) The price of gasoline will increase by 1 CHF.
- (b) If the objective of the government is to reduce the level of pollution, this policy will be more effective, the lower the price elasticity of demand.
- (c) If the objective of the government is to reduce public deficit and to increase its revenues, this policy will be more effective, the lower the price elasticity of demand.
- (d) If the demand for gasoline is price inelastic, total expenditure by consumers will remain constant.

Question 8

Consider the market for milk, where demand and supply (in liters) are given by the following functions:

$$Q^D(P) = 30 - 2P \quad \text{and} \quad Q^S(P) = -10 + 2P$$

In equilibrium, which of the following propositions is FALSE?

- (a) The introduction of a price floor equal to 10 CHF does not create any disequilibrium between supply and demand on the market.
- (b) The introduction of a price ceiling equal to 10 CHF does not create any disequilibrium between supply and demand on the market.
- (c) The introduction of a price ceiling equal to 8 CHF creates an excess demand equal to 8 liters.
- (d) The introduction of a price floor equal to 12 CHF creates an excess demand equal to 8 liters.

Question 9

Which of the following propositions is correct?

- (a) In the presence of a market failure, the imposition of a tax can increase total surplus.
- (b) Absent a market failure, the imposition of a tax can increase total surplus.
- (c) In a perfectly competitive market, the introduction of a price ceiling can increase total surplus.
- (d) In a perfectly competitive market, the introduction of a price floor can increase total surplus.

Question 10

In a perfectly competitive market, demand and supply are given by the following functions:

$$Q^D(P) = 28 - 2P \quad \text{and} \quad Q^S(P) = -2 + P$$

The government decides to introduce a unit tax of 3 CHF paid by producers. At the new equilibrium, which of the following propositions is FALSE?

- (a) The price paid by consumers is equal to 11 CHF.
- (b) The price received by producers is equal to 8 CHF.
- (c) The quantity traded will be reduced by half.
- (d) The fiscal revenue will be equal to 18.

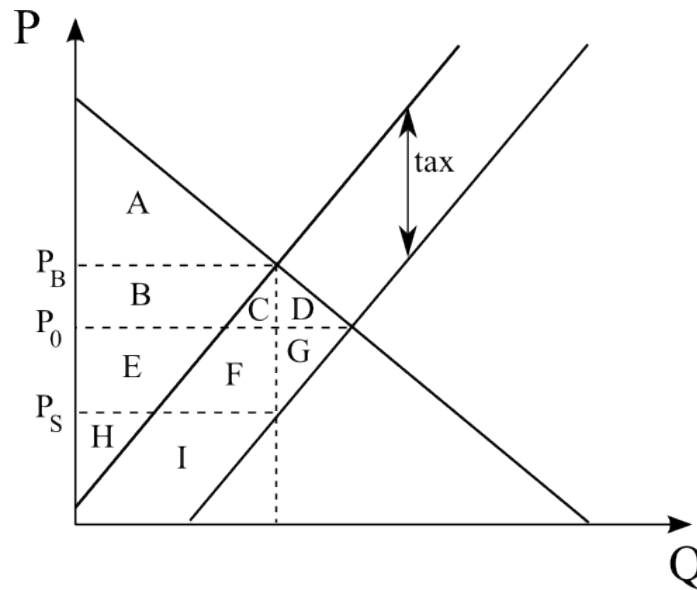
Question 11

The practical implementation of the Coase theorem is subject to some critiques. Among the following, which one does not apply?

- (a) Property rights are difficult to define.
- (b) If the number of agents is high, it's harder to coordinate a negotiated solution.
- (c) Transaction costs can be higher than the net gain of a negotiated solution.
- (d) The theorem only applies to models of perfect competition.

Question 12

The graph below represents a perfectly competitive market. If a unit tax equal to t is imposed on existing producers, which surface will represent the loss of consumer surplus (after the imposition of the tax)?



- (a) $B + C + E + F$
- (b) $B + C + D$
- (c) $E + F + G$
- (d) $D + G$

Question 13

In the presence of a negative externality:

- (a) the market itself yields the socially optimal level of production.
- (b) the *laissez-faire* quantity produced by the market is smaller than the social optimum.
- (c) the marginal social benefit is lower than the marginal social cost at the market equilibrium.
- (d) the cost of government intervention to attain the social optimum is larger than the gain to the society of this intervention.

Question 14

From an economic point of view, environmental policies can be justified because:

- (a) the existence of external costs implies a market failure.
- (b) the damages inflicted upon the environment are scientifically proven.
- (c) fiscal revenues from environmental taxation can be used to finance environmental programs.
- (d) the socially optimal level of pollution is zero.

Question 15

The Servette Football Club plays its matches at Stade de Genève, which has a capacity of 30'000. For the season 2009/2010, the average attendance was 3'584. The matches of Servette Football Club therefore have the following characteristics:

- (a) rivalry and excludability.
- (b) non-rivalry and non-excludability.
- (c) rivalry and non-excludability.
- (d) non-rivalry and excludability.

Question 16

Which of the following statements concerning the notions of rivalry and excludability is correct?

- (a) Natural resources such as rivers and air are typically characterized by rivalry and non-excludability.
- (b) A public good is characterized by rivalry and excludability.
- (c) A public good allows to satisfy some basic needs and it is put at everybody's disposal for free.
- (d) Non-rivalry is a characteristic of goods for which it is difficult to make consumers pay.

Question 17

Which of the following statements concerning the marginal revenue function of a monopolist firm is correct?

- (a) Marginal revenue is equal to price (inverse demand function) because selling an additional unit increases total revenue by an amount equal to the price.
- (b) Marginal revenue is more than the price because selling an additional unit increases the price of all infra-marginal units.
- (c) Marginal revenue is less than the price because selling an additional unit decreases the price of all infra-marginal units.
- (d) Marginal revenue is constant and equal to the price.

Question 18

A profit-maximizing monopolist faces a downward-sloping demand curve that has a constant price elasticity of -3 . The firm finds it optimal to charge a price of 12 for its output. What is its marginal cost at the optimal level of output?

- (a) 8.
- (b) 9.
- (c) 12.
- (d) 24.

Question 19

Consider a firm that is monopolist over a city's underground parkings. The exploitation of these parkings is characterized by a total cost function that comprises fixed costs only: $TC(Q) = FC$. The demand for underground parkings has the following form: $Q^D(P) = a - bP$. Which of the following propositions is correct?

- (a) When the firm maximizes profits, the price elasticity of demand will be larger than 1 in absolute value.
- (b) In order to maximize profits, the firm will choose price equal to zero because the marginal cost is equal to zero.
- (c) In equilibrium, a small increase in price will make total revenues increase.
- (d) If the elasticity of demand is equal to -1.5 , the firm should reduce the price to increase profits.

Question 20

Which of the following statements on natural monopoly is correct?

- (a) Total surplus is maximized when marginal revenue is equal to marginal cost, but the monopolist makes losses.
- (b) If the price is equal to marginal cost, total surplus is maximized, but the monopolist makes losses without government intervention.
- (c) If the price is equal to marginal cost, the equilibrium is efficient and government intervention is unnecessary.
- (d) The optimal equilibrium for the society is reached when price is equal to average cost because the monopolist loses its power, and we are in a situation of perfect competition.

Question 21

Suppose the inverse demand for cookies is given by $P(Q) = 26 - 2Q$ (where Q is expressed in tons). There is only one firm producing cookies, with constant marginal cost equal to 2. In equilibrium, how many tons of cookies will be produced?

- (a) 1.
- (b) 6.
- (c) 12.
- (d) There is not enough information to compute the equilibrium quantity.

Question 22

Consider a consumer who consumes two goods, maximizing utility given his income. Marginal utilities of consuming the two goods are decreasing. To the left of the equilibrium, the marginal rate of substitution is:

- (a) equal to the relative price.
- (b) smaller than the relative price.
- (c) larger than the relative price.
- (d) equal to the one of the consumption baskets at the right of the equilibrium.

Question 23

Lignedroite is a small village consisting of 20 families of the same size. The village has the peculiar shape of a single and straight street. The families are distributed uniformly along this street. For some unfortunate reason, health conditions in *Lignedroite* are not very good, so that there is enough demand to open two pharmacies (there is no pharmacy today in the village). The mayor therefore calls for tenders in order to have two pharmacies be opened, and he sets some rules:

- The medicines' prices will be imposed.
- The owners must deliver in a sealed envelope the location they desire for their future pharmacies simultaneously.

What will the owners of the pharmacies choose?

- (a) The two pharmacies will locate in opposite extremes of the village.
- (b) The two pharmacies will locate at the center of the village.
- (c) In such conditions, both owners decide not to open a pharmacy.
- (d) There is no Nash Equilibrium for the simultaneous location choice.

Question 24

We can say with certainty that the income effect dominates the substitution effect in the case of:

- (a) normal goods.
- (b) inferior goods.
- (c) perfect substitute goods.
- (d) perfect complement goods.

Question 25

Consider an individual who consumes goods 1 and 2. Following an increase in the price of good 2, we observe a reduction in the quantity demanded of the two goods. What can we say with certainty?

- (a) Goods 1 and 2 are substitutes.
- (b) Good 1 is a normal good.
- (c) Good 1 is an inferior good.
- (d) Good 2 is a normal good.

Question 26

Consider an individual who consumes two substitute goods. If good 2 is a Giffen good, when the price of good 2 increases, the quantity consumed of good 1 will necessarily:

- (a) increase.
- (b) decrease.
- (c) stay the same.
- (d) increase by an amount larger than the quantity consumed of good 2.

Question 27

The owner of a restaurant cannot observe the effort of the waitress he employs. In order to reduce the risk of moral hazard, the owner considers different types of work contracts. Which of the following contracts allows to maximize the production efficiency?

- (a) The waitress' wage is proportional to the profits of the restaurant.
- (b) The waitress' wage is proportional to the number of meals she serves.
- (c) The waitress' wage is equal to the profits of the restaurant, minus a fixed amount that the owner keeps for himself.
- (d) The waitress' wage is fixed.

Question 28

Consider an individual who must decide each period how to allocate his income between present and future consumption. The optimal allocation may not be achieved because the individual suffers from time-inconsistency, which leads him to consume today a lot more than the optimal amount. The time-inconsistency problem can be solved:

- (a) with an increase in the interest rate on savings.
- (b) with a saving plan penalizing the deviations from the amount of savings decided at the beginning of the period.
- (c) if future consumption is a Giffen good.
- (d) All of the above answers are correct.

Question 29

Consider a market with many sellers and buyers of used cars. There are two types of cars on the market: high quality and low quality cars. The sellers have perfect information on the quality of the cars they sell, and they are ready to sell high quality cars at the reservation price of 1'400 and low quality cars at the reservation price of 500. Buyers cannot observe the quality of cars they will buy, but they can estimate the probability p that a car is of the low quality type ($0 < p < 1$). They are willing to pay 1'500 for high quality cars and 1'000 for low quality cars. If buyers are risk-neutral, in the market equilibrium with asymmetric information:

- (a) good quality cars will be traded if $p \leq \frac{1}{5}$.
- (b) good quality cars will be traded if $p = \frac{1}{2}$.
- (c) the equilibrium price of cars will be equal to 1'250.
- (d) only low quality cars will be traded in equilibrium.

Question 30

Consider an individual who must decide how to allocate his income between present and future consumption. Following an increase in the interest rate, we observe an increase in present consumption and a decrease in future consumption. This implies that:

- (a) present consumption is a normal good.
- (b) future consumption is an inferior good.
- (c) future consumption is a Giffen good.
- (d) All of the above answers are correct.