KÖZGAZDASÁGI-MARKETING ALAPISMERETEK
ANGOL NYELVEN

EMELT SZINTŰ ÍRÁSBELI ÉRETTSÉGI VIZSGA

JAVÍTÁSI-ÉRTÉKELÉSI ÚTMUTATÓ

OKTATÁSI ÉS KULTURÁLIS MINISZTÉRIUM
Important information

During correction, all partial points awarded for partial solutions, as well as all correct solutions and mistakes have to be indicated.

When awarding points, the following principles have to be followed:

1. Maximum points can only be given for perfect solutions. In case of missing answers, the partial point awardable for the answer must be deducted.

2. In the case of questions solved with logical or calculation errors, half of partial points awardable must be deducted at the section where the error was committed. At later stages of the question, if the examinee provides logically correct solutions the results of which are incorrect due to his/her previous error, these should then be considered as correct, therefore no subsequent points should be deducted due to one error.

3. Only one answer per question is to be evaluated.

4. In the case of calculation questions, indicating results only will not be sufficient; all partial calculations as well as applied formulas must also be indicated on the work sheet.

5. In the case of true-false questions, the indication of T or F is worth 1 point. Incorrect indications accompanied by professionally correct explanations can be awarded 1 point. (Explanations that differ from those given in the correction-evaluation guide, but which are nonetheless professionally correct solutions can be awarded full points.)

6. There are several correct solutions for the questions. Procedures (names) that differ from those given in the correction-evaluation guide could also be completely correct and as such must be awarded full points.

Answers provided in the correction-evaluation guide can only be awarded the points indicated.

The further breaking down of indicated points is possible only if this is separately indicated. Points that come about as a result can only be whole numbers.
MICRO-ECONOMICS

I. MULTIPLE CHOICE QUESTIONS  3 x 1 = 3 points

Underline the correct answer.

1. The interest of the loan received
   a. is opportunity cost, as income we cannot access.
   b. is equal to normal profit.
   c. **is explicit cost.**

2. The labour force demand function of an enterprise corresponds to
   a. the marginal cost function of labour force.
   b. **the marginal-revenue product function of labour force.**
   c. the marginal product function.

3. If the internal rate of return is higher than the market rate of interest
   a. **then the investment was worth making, because it ensures higher returns.**
   b. then it was a mistake to make the investment, because it is showing a slower rate of return.
   c. there is no connection between the assessment of the two interest rates and the investment.
II. TRUE – FALSE QUESTIONS

Decide whether the following statements are true (T) or false (F).
Write the correct letter on the dotted line next to the statement.
Briefly explain your answer even if you feel the statement is true.

1. If we select a point within the range of the production possibilities frontier function, then at this point we are not fully utilising available resources.

True. The production possibility frontier function is a curve, which in the case of two products—under the given conditions of the model—shows how much products an economy can produce if it utilises all its resources. In the case of points located within the curve, available resources are not fully utilised, therefore these points are not efficient, and there are unnecessary or free capacities in the system.

2. If an enterprise operating on a fully competing market sells its products at a price under the average cost minimum, then it would be more rational to suspend production.

False. In the case of a market price between the minimum of average cost and the minimum of average variable cost, the enterprise follows a loss-minimizing strategy, namely, if it sells its products then those revenues still cover variable costs, as well as a portion of fixed costs. This means that losses are lower than if production was suspended, since in that case all fixed costs would be accounted as losses. The business interruption point is at the minimum of average variable cost.

3. The price of agricultural products is high, because the rent of land is high.

False. The valid correlation is quite the opposite: the rent of land is high, because the price of goods produced on the land is high. The supply of land is inelastic and constant, and its demand is determined by the demand for produce that can be produced on it.

4. When the production function increases at a decelerated rate, the marginal product function decreases.

True. The marginal product function takes on its maximum at—the inflexion point of the production function, namely the point beyond which the production function increases at a decelerated rate.
III. DEFINITIONS

Define the following concepts.

1. Gossen’s 2nd law:
Consumers make optimal choices regarding spending if the marginal utility to be gained by spending the last unit of money is equal for any of the products. (In other words, the principle of the levelling of advantages: consumers can increase their total utility until the utility gain exceeds the rate of sacrificed utility. In an ideal case gained and sacrificed utilities equal out.)

2. Positive externality:
We are talking about positive externality, when social marginal utility is higher than individual marginal utility. In the case of positive externality, for the individual influenced by an external economic effect the externality influences the environment in a positive, beneficial way.

IV. CALCULATION AND GEOMETRICAL QUESTIONS

Question 1

The following data is known about a company operating on a fully competing market:

<table>
<thead>
<tr>
<th>L (persons)</th>
<th>Q (pcs)</th>
<th>AP_L (pcs)</th>
<th>MP_L (pcs)</th>
<th>MRP_L=VMP_L (HUF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>11 500</td>
</tr>
<tr>
<td>2</td>
<td>24</td>
<td>12</td>
<td>14</td>
<td>16 100</td>
</tr>
<tr>
<td>3</td>
<td>36</td>
<td>12</td>
<td>12</td>
<td>13 800</td>
</tr>
<tr>
<td>4</td>
<td>42</td>
<td>10,5</td>
<td>6</td>
<td>6 900</td>
</tr>
<tr>
<td>5</td>
<td>46</td>
<td>9,2</td>
<td>4</td>
<td>4 600</td>
</tr>
<tr>
<td>6</td>
<td>48</td>
<td>8</td>
<td>2</td>
<td>2 300</td>
</tr>
<tr>
<td>7</td>
<td>49</td>
<td>7</td>
<td>1</td>
<td>1 150</td>
</tr>
<tr>
<td>8</td>
<td>48</td>
<td>6</td>
<td>-1</td>
<td>-1 150</td>
</tr>
</tbody>
</table>

The only variable input is labour, the cost of which is HUF 6 900/person.
1.1. Calculate the data missing from the production, average product and marginal product columns of the table. (Make sure to indicate your calculations precisely.)

Any two correct answers are worth 1 point.

8 x 1 = 8 points

\[
\begin{align*}
AP_L &= Q / L = 10 / 1 = 10 \\
MP_L &= \Delta Q / \Delta L = 10 / 1 = 10 \\
Q &= AP_L \times L = 12 \times 2 = 24 \\
MP_L &= \Delta Q / \Delta L = 14 / 1 = 14 \\
Q_n &= Q_{n-1} + MP_L = 24 + 12 = 36 \\
AP_L &= Q / L = 36 / 3 = 12 \\
Q &= AP_L \times L = 46 / 4 = 10.5 \\
MP_L &= \Delta Q / \Delta L = 6 / 1 = 6 \\
AP_L &= Q / L = 46 / 5 = 9.2 \\
Q_n &= Q_{n-1} + MP_L = 46 + 2 = 48 \\
AP_L &= Q / L = 48 / 6 = 8 \\
Q &= AP_L \times L = 48 / 7 = 7 \\
MP_L &= \Delta Q / \Delta L = 49 + ( -1 ) = 48 \\
AP_L &= Q / L = 48 / 8 = 6
\end{align*}
\]
1.2. What is the market price of output? Determine the values of the marginal revenue product of labour.

\[ MRP_L = MPL \times P_X \]  
2 points

\[ 4600 = 4 \times P_X \]

\[ P_X = \frac{4600}{4} = 1150 \]

VMPL values:  
2 points

\( (1 \text{ point can be awarded for at least three correct answers, and } 2 \text{ points for at least 6 correct answers.}) \)

\[ 10 \times 1150 = 11500 \]

\[ 14 \times 1150 = 16100 \]

\[ 12 \times 1150 = 13800 \]

\[ 6 \times 1150 = 6900 \]

\[ 2 \times 1150 = 2300 \]

\[ 1 \times 1150 = 1150 \]

\[ -1 \times 1150 = -1150 \]

1.3. What is the labour force utilisation at the optimum?

The condition of optimal labour force utilisation: \( MFC_L = VMP_L \)  
1 point

Therefore, optimal labour force utilisation for the given company is \( ...4... \) persons  
1 point

Question 2 5 points

A company has to make a decision regarding which of two machines to procure.

The yield of the two machines is identical for the first four years, but the first machine can operate for 4 years, while the other—which costs €400 thousand more—can operate for 5 years.

In the fifth year, the yield of the second machine is €600 thousand.

The market rate of interest is 10%.
Question:

2.1. Advise the entrepreneur on which machine to purchase. Write down your calculations and explain your answer. (Round the interest factor to two decimal places, and euro values to one decimal place.) A total of 1 point can be deducted for rounding errors.

The yield of the second machine in Year 5 at present value = 600 / 1.1^5 = 600 / 1.61 = €372.7 thousand 2 points

Surplus investment is €400 thousand, surplus yield at present value: €372.7 thousand, therefore net present value is: – €27.3 thousand 1 point

Net present value is negative; therefore buying the more expensive machine is not profitable 1 point

2.2. What is the additional amount it is still profitable to pay for the more expensive machine? 1 point

Maximum the present value of the yield of Year 5, namely €372.7 thousand. In this case, NPV = 0, the investment would just about show returns.

Question 3 6 points

The coordinate-system below shows the marginal cost and demand functions of a fully competing market and a monopoly market.

Indicate the area of consumer surplus on both diagrams. In the case of the monopoly market, name the functions to be drawn in, as well as significant points and the areas created as a result. Try to make your markings as precise as possible.
Consumer surplus on the fully competing market: 1 point
Marginal revenue function on the monopoly market: 1 point
Determination of optimal production quantity and market price on the monopoly market: 1 point
Consumer surplus, extra profit and deadweight loss in the monopoly: 3 x 1 = 3 points

V. ELABORATIVE QUESTION 10 points

Present what you have learnt about the elasticity of demand. Make sure you explain the contents, calculation and definition of the various elasticity indicators.

The price elasticity of demand shows how the quantity in demand of a product changes as a result of a 1% price change. 1 point

Calculation: \( \frac{q_1 - q_0}{q_1 + q_0} : \frac{p_1 - p_0}{p_1 + p_0} \) 1 point

Interpretation of the coefficient: In the case of normal goods, the indicator has a negative sign, because the increasing of price decreases demand and the same is true the other way around. The price elasticity coefficient has a positive sign in the case of prestige goods, securities, precious metals, works of art, etc.

The product’s demand is elastic if the value of the coefficient is equal to or greater than 1; and inelastic if the coefficient is lower than 1. 1 point

Price elasticity is impacted by
- the features and storage life of products and their role in consumption,
- the existence of substitute products: the more substitute products a good has, the more elastic its demand,
- the price of substitute products,
- product price in relation to the consumer’s income

Cross price-elasticity of demand: expresses how the change of the price of one good affects the quantity in demand of another. 1 point

Calculation: \( \frac{A(q_1 - q_0)}{A(q_1 + q_0)} : \frac{B(p_1 - p_0)}{B(p_1 + p_0)} \) 1 point
Interpretation of the coefficient: What is significant here is the sign of the coefficient: if this is negative, then the two products have joint or complementary demands; if, however, it is positive, then the two products have competitive demands. If the value of cross price-elasticity is 0, then the demands of the two products are independent of each other. 1 point

Income elasticity of demand: expresses the percentage with which the quantity in demand of a good changes if consumer income changes by 1%. 1 point

Calculation: \[
\frac{(q_i - q_o)}{(q_i + q_o)} : \frac{(j_i - j_o)}{(j_i + j_o)}
\] 1 point

Interpretation of the coefficient: The value of the coefficient is positive in the case of normal goods, because typically an increase in income also increases demand. Exceptions to this rule are inferior goods, the demands of which increase if consumer income decreases, or if consumer income increases, then the demand of such goods decreases. The demand of luxury goods is highly elastic, therefore in their case the value of the coefficient is greater than 1. 1 point

MACRO-ECONOMICS

VI. MULTIPLE CHOICE QUESTIONS 3 x 1 = 3 points

Underline the correct answer.

1. The rate of consumption expresses

   a. what percentage of income is spent on consumption.

   b. what percentage of surplus income is spent on consumption.

   c. how consumption and investment relate to each other.

2. If the tax determined as a percentage of income changes, then as a result

   a. the sloping of the aggregate demand function changes.

   b. the aggregate demand function shifts parallel to the original function.

   c. the investment function shifts.
3. If employment increases, then as a result
   a. inflation will also increase.
   b. macro-income will also increase.
   c. both inflation and macro-income increase.

VII. TRUE – FALSE QUESTIONS

Decide whether the following statements are true (T) or false (F).
Write the correct letter on the dotted line next to the statement.
Briefly explain your answer even if you feel the statement is true.

1. The increasing of money supply causes demand-pull inflation. …T…
   True. If the amount of money in circulation increases, aggregate demand will also increase
   and the macro-demand function shifts to the right and upwards.

2. Import is not dependent of income. …F…
   False. Part of import is autonomous import, which is not dependent of income, however,
   another part is the part dependent of income, which is determined by the marginal propensity
   to import and macro-income. IM = IM₀ + m*Y

3. If government savings have a negative sign, this means that the state has debts or
   credit owed to domestic and/or foreign economic players. …T…
   True. In each case, negative savings indicate that revenues are lower than expenditures. In the
   government’s case, this deficit is financed by foreign or domestic loans.

4. The central bank and commercial banks are all able to create money. ….T…
   True. The essence of money creation is that monetary financial institutions offer and provide
   credit and loans. This can be provided by commercial banks as well as the central bank
   However, emission and the issuing of banknotes and coins are central bank monopolies.
VIII. DEFINITIONS 2 x 2 = 4 points
Define the following concepts.

1. Economic sector:
The totality of economic entities, that wish to achieve similar economic objectives; that have to calculate with similar resources and restricting factors and make similar economic decisions on the basis of these.

2. Flexible or floating exchange rate:
The exchange rate, where the rate is determined by the demand and supply of the given foreign currency.

IX. CALCULATION AND GEOMETRICAL QUESTIONS 25 points

Question 1 14 points
Data available on a macro-economy are the following:

<table>
<thead>
<tr>
<th>Income</th>
<th>Consumption</th>
<th>Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000</td>
<td>1200</td>
<td>−200</td>
</tr>
<tr>
<td>1500</td>
<td>1600</td>
<td>−100</td>
</tr>
<tr>
<td>2000</td>
<td>2000</td>
<td>−</td>
</tr>
<tr>
<td>2500</td>
<td>2400</td>
<td>100</td>
</tr>
<tr>
<td>3000</td>
<td>2800</td>
<td>200</td>
</tr>
</tbody>
</table>

Question:
1.1. Calculate the missing data. How much is marginal propensity to consume, autonomous consumption, marginal propensity to save and autonomous savings? Indicate your calculations.

\[ C = Y - S = 1000 - (-200) = 1200 \]  
1 point

\[ \hat{c} = \Delta C / \Delta Y = 1600 / 2000 = 0.8 \]  
2 points
$1200 = 0.8 \times 1000 + C_0$

$C_0 = 400$  

(or $2800 = 0.8 \times 3000 + C_0$)

$C_0 = 400$)

$\overline{s} = 1 - 0.8 = 0.2$  

$S_0 = -400$  

$\overline{S}(1500) = 1500 \times 0.8 + 400 = 1600$  

$S(1500) = 1500 - 1600 = -100$  

2 x 1 = 2 points

$\overline{C}(1500) = 1500 \times 0.8 + 400 = 1600$  

$S(1500) = 1500 - 1600 = -100$  

2 x 1 = 2 points

$\overline{C}(2000) = 2000 \times 0.8 + 400 = 2000$  


2 x 1 = 2 points

$\overline{C}(2500) = 2500 \times 0.8 + 400 = 2400$  

$S(2500) = 2500 - 2400 = 100$  

2 x 1 = 2 points

$\overline{C}(3000) = 2800$  

$S(3000) = 3000 - 2800 = 200$  

1 point

**Question 2**

5 points

Suppose that in a three-player economy, equilibrium is established at the $Y = 5000$ level. We also know that households spend 75% of each new acquired unit of income on consumption. In order to stimulate the labour market, the government increases the amount of government expenditures by 150 units.

Question:

How much will equilibrium income increase by? What will be the value of the new equilibrium income?

Spending multiplier = $1 / (1 \overline{c}) = 1 / 0.25 = 4$  

2 points

Spending multiplier = $\Delta Y / \Delta G$

$4 = \Delta Y / 150$

$\Delta Y = 600$  

2 points

$Y' = 5000 + 600 = 5600$  

1 point

**Question 3**

6 points

The labour market of a country can be described with the following functions:

$L^D = 1600 - 3w/p$, and

$L^S = 300 + 2w/p$.

$P = 2$ and each unit of $L$ stands for 1000 persons.
Question:

3.1. Determine equilibrium real wage and the number of employed.

\[ L^D = L^S \]
\[ 1600 - 3w/p = 300 + 2w/p \]
\[ 1300 = 5w/p \]
\[ 260 = w/p \]  
1 point

\[ L_f = 1600 - 3 \times 260 = 820 \text{ thousand persons} \]  
1 point

3.2. What would be the number of involuntary and voluntary unemployed, if \( w = 660 \), and the size of the active population is 1200 thousand persons?

\[ L^D = 1600 - 3 \times 330 = 610 \text{ thousand persons} \]  
1 point

\[ L^S = 300 + 2 \times 330 = 960 \text{ thousand persons} \]  
1 point

There is oversupply (unemployment) on the market.  
The number of involuntary unemployed in this case: \( 960 - 610 = 350 \text{ thousand persons} \)  
1 point

The number of voluntary unemployed: \( 1200 - 960 = 240 \text{ thousand persons} \)  
1 point

X. ELABORATIVE QUESTION 10 points

Elaborate on what you have learnt about budgetary (fiscal) policy. Make sure you also explain the role of taxes, transfers and government expenditures.

**Budgetary policy** is the system of economic policy goals and tools determining the size and composition of state expenditures and revenues. 1 point

Within the framework of its budgetary policy, the state regulates the basis and rates of taxes as well as what other revenues it wants to acquire; and decides how and on what it spends these revenues on.

The primary objective of budgetary policy is to regulate output. This is achieved through influencing demand.
Possible objectives of budgetary policy are to increase demand: expansionary economic policy (tools applied are decreasing taxes and/or increasing government expenditures and transfers, deficit budget), or to restrict demand: restrictive economic policy (increasing of taxes, decreasing of government expenditures and transfers). 1 point

The tools of budgetary policy are therefore taxes, transfers, government expenditures and government savings or in other words the balance of the budget.

Tax is income forcibly collected by the state. Increasing taxes decreases commodity purchase demand, therefore aggregate market demand as well. As a result of this change, equilibrium income also changes. The impact of one unit of tax on equilibrium income is described by the tax multiplier. \( \frac{\dot{c}}{1 - \dot{c}} \). 2 points

Taxes can be:
- income-related or autonomous taxes,
- consumption or turnover-related taxes,
- direct or indirect taxes,
- wealth and accumulation-related taxes,
- taxes collected under other legal titles.

The rate of impact of transfers on equilibrium income is equal to that of the tax multiplier, but has an opposite effect, the increasing of transfers increases aggregate market demand and equilibrium income. 1 point

If government expenditures are increased, then this also has an increasing effect on aggregate demand. As a result of increasing government expenditures, aggregate income also increases. The impact of the change of one unit of G on equilibrium income is determined by the spending multiplier \( \frac{1}{1 - \dot{c}} \). 1 point

Since the spending multiplier is of a greater value, the influencing effect of government expenditures is also stronger than the effect the changes of taxes can have. 1 point

Haavelmo’s Theorem:

If the size of government expenditures is equal to the amount of taxes, then the change of equilibrium income is equal to the amount of government expenditures. In such cases the government expenditure multiplier is 1. 2 points