Kyiv School of Economics

founded by EERC and the Victor Pinchuk Foundation

MA in Mathematical Economics and Econometrics

Sample Admission Exam in Economics

Instructions:

1. Do not turn this page until told to do so.
2. No dictionaries are allowed.
3. No calculators or other similar devices are allowed. Mobile phones must be switched off for the duration of the exam.
4. **Positively no cheating. If caught cheating, you will be asked to leave the room immediately, and your grade for this exam will be zero.**

June, 2016

Kyiv

1. Suppose that demand in the market for cars is given by the formula $P = 100 - 2Q_d$ where P is the price per car and Q_d is the quantity of cars demanded per week. Suppose that the supply for cars is given by $P = 20 + 6Q_s$, where Q_s is the quantity of cars supplied per week.

   (a) (5 points) At what price is the quantity supplied equal to the quantity demanded?

   (b) (5 points) In equilibrium, what is the total weekly spending on cars in this market?

   (c) (5 points) Suppose that the governments introduces a tax of 10 monetary units per car. What is the government budget revenue from this tax?

2. (5 points) The Ukrainian government decides to spend 1 000 000 hryvnas on a new highway. What is the maximum potential change in Ukrainian GDP if the marginal propensity to save in the economy is 0.3?

3. Suppose that the money supply and the nominal GDP for a hypothetical economy are \$42 billion and \$252 billion respectively.

a) (5 points) What is the velocity of money?

b) (5 points) If the central bank changes money supply by \$8 billion and prices are completely flexible in this economy, by how much will the price level change (in %)?

4. (5 points) Suppose that a saver puts 2300 hryvnas on a bank account at the annual interest rate 20%. What is the real value (purchasing power) of that deposit in one year if inflation turns out to be 15%?

5. (5 points) What is the crowding-out effect associated with expansionary fiscal policy?

6. (5 points) What is the difference between rational expectations and adaptive expectations.

7. (5 points) Why high and variable inflation can reduce the level of investments in the economy?

8. (5 points) Complete the sentences:

The price elasticity of demand is computed as the percentage change in the _________________ of a product purchased divided by the percentage change in the _________________ of this product. When there are many close substitutes available, the demand of the product is likely to be _________________. When the product is a sizable component of the consumer’s budget, its demand is likely to be _________________. Typically, the price elasticity of a product will ____________ in absolute value as consumers have had more time to adjust to a change in its price.

9. (5 points) A firm on a competitive market faces price of $10 for its product and produces 100 units of it. The marginal cost of production is $10; average total cost is $12, and fixed cost is $150. Calculate the firm’s profit (loss).

10. (5 points) Suppose that a large oil-exporting country suddenly discovers that its oil reserves are nearly exhausted. As a consequence, the income of its residents will fall sharply in a few years. This country is also a large world importer of olive oil. Assuming that olive oil is a luxury good, what is likely to happen to the equilibrium price and quantity of olive oil, other things equal?

11. (5 points) Explain why the minimum-wage legislation is likely to increase unemployment among low-skilled workers? Who is likely to benefit from this legislation?

12. (5 points) Suppose that a consumer chooses an optimal bundle of goods X and Y. Price of a unit of good X is $3, price of a unit of good Y is $4, and the consumer's budget is $24. How many units of good X and good Y will the optimal bundle include if for all levels of consumption the marginal utility from consuming good X is 3, and the marginal utility from consuming good Y is 2.

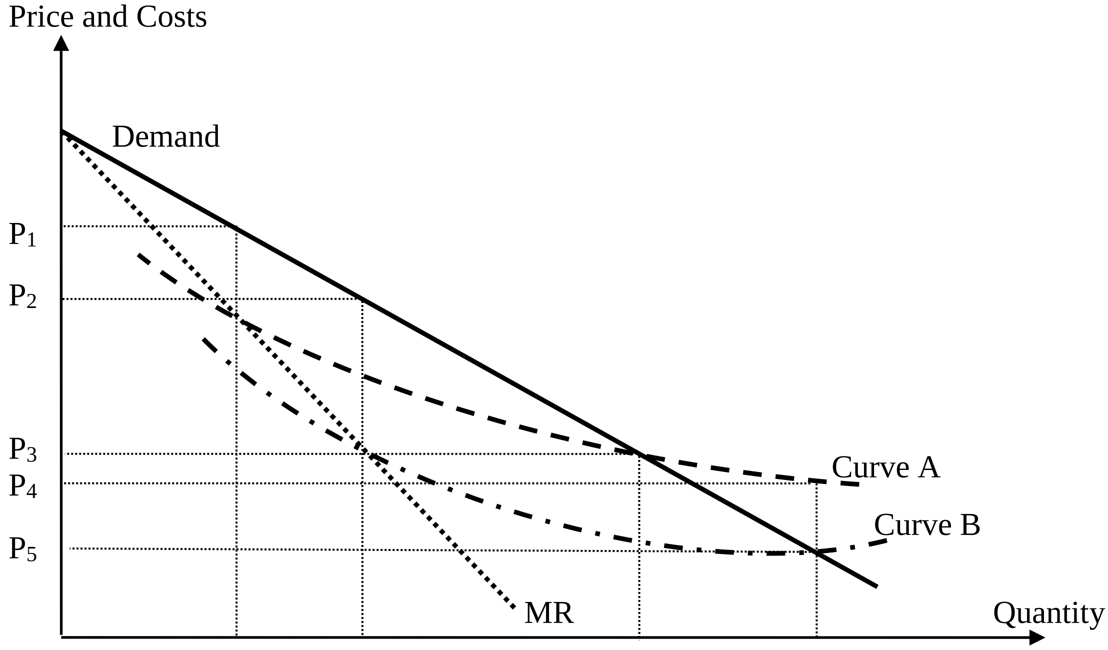
13. (5 points) Suppose that the total revenue of a firm falls by 7% after the price of the product that this firm sells falls by 12%. What can you say about price elasticity of demand for this product?

14. (5 points) What is the moral hazard problem associated with car insurance?

15. (5 points) Fiscal policy refers to the government policy that attempts to influence the economy through changes in _____ (<u>A</u>: interest rates and taxation; <u>B</u>: government spending and taxation; <u>C</u>: interest rates and the supply of money; <u>D</u>: government spending and the supply of money.) Expansionary fiscal policy involves a(n) ________ (<u>A</u>: increase , <u>B</u>: decrease) in government spending and/or a(n) ________ (<u>A</u>: increase, <u>B</u>: decrease) in taxation revenue. Expansionary fiscal policy is usually associated with a government budget _____ (<u>A</u>: surplus, <u>B</u>: deficit). A fiscal ______ (<u>A</u>: surplus, <u>B</u>: deficit) is often funded by issuing government securities.

16. Explain the difference between Gross National Product (GNP) and Gross Domestic Product (GDP).

17. (5 points) Consider the case of a natural monopoly depicted on the graph below.



a) Curve A is the _____________ (Average Total Cost; Marginal Cost) curve.
b) Curve B is the _____________ (Average Total Cost; Marginal Cost) curve.
c) The monopoly price is given by _________ (P_1, P_2, P_3, P_4, P_5).
d) Clearly mark the area corresponding to the firm's loss if the monopoly faces a legislative price ceiling set at P_5.
e) What can the government do to persuade the firm to stay in the market in the long run (with the price ceiling still being set at P_5)?