

# International Economics Olympiad

Moscow

## Economics

### Test

All 20 multiple choice questions will be graded (4 raw points for the correct answer, minus 1 raw point for the incorrect answer, zero points for no answer).

1. What does UK GDP per capita measure?

- 1) the total output of London's economy
- 2) the average disposable income of a UK resident
- 3) the total output of the UK citizens, divided by the number of the citizens
- 4) the total output of the UK's economy, divided by the country's population

2. Currently you work for 40 hours per week at the wage rate of \$20 an hour. Your free hours are defined as the number of hours not spent in work per week, which in this case is  $24 \text{ hours} \times 7 \text{ days} - 40 \text{ hours} = 128 \text{ hours per week}$ . Suppose now that your wage rate has increased by 25%. If you are happy to keep your total weekly income constant, then:

- 1) Your total number of working hours per week will fall by 25%.
- 2) Your total number of working hours per week will be 30 hours.
- 3) Your total number of free hours per week will increase by 25%.
- 4) Your total number of free hours per week will increase by 6.25%.

3. Four farmers are deciding whether to contribute to the maintenance of an irrigation project. For each farmer, the cost of contributing to the project is \$10. But when any one farmer contributes, all four of them will benefit from an increase in their crop yields, in particular each gains additional \$8.

Which of the following statements is correct?

- 1) If all the farmers are selfish, none of them will contribute.
- 2) There are multiple Nash equilibria in this game.
- 3) If Kim is altruistic and contributes \$10, the others might contribute too, even if they are selfish.
- 4) If the farmers have to reconsider this decision every year and consider infinite horizon of planning, they will never choose to contribute to the project if they are selfish.

4. Which of the following statements about the outcome of an economic interaction is correct?

- 1) If the allocation is Pareto efficient, then you cannot make anyone better off without making someone else worse off.

- 2) All participants are happy with what they get if the allocation is Pareto efficient.
- 3) There cannot be more than one Pareto-efficient outcome.
- 4) Pareto-efficient outcome is always fair.

5. Maria earns \$12 per hour in her current job and works 35 hours a week. Her disutility of effort is equivalent to a cost of \$2 per hour of work. If she loses her job, she will receive unemployment benefit equivalent to \$6 per hour. Additionally, being unemployed has psychological and social costs equivalent to \$1 per hour. Then:

- 1) The employment rent per hour is \$3.
- 2) Maria's reservation wage is \$6 per hour.
- 3) If she is offered a job with the wage \$11 and disutility of \$0,5, she will refuse.
- 4) If she is offered a job with the wage \$14 and disutility of \$3, she will take it.

6. The table represents market demand  $Q$  for a good at different prices  $P$ .

$Q$	100	200	300	400	500	600	700	800	900	1,000
$P$	\$270	\$240	\$210	\$180	\$150	\$120	\$90	\$60	\$30	\$0

The firm's unit cost of production is \$60. Based on this information, which of the following is correct?

- 1) At  $Q = 100$ , the firm's profit is \$20,000.
- 2) The profit-maximizing output is  $Q = 400$ .
- 3) The maximum profit that can be attained is \$50,000.
- 4) The firm will make a loss at all outputs of 800 and above.

7. Which of the following statements is correct?

- 1) A fall in the mortgage interest rate would shift down the demand curve for new houses.
- 2) The launch of a new Samsung smartphone would shift up the demand curve for existing iPhones.
- 3) A fall in the oil price would shift up the demand curve for oil.
- 4) A fall in the oil price would shift down the supply curve for plastics.

8. Which of these measures will by itself decrease the Gini coefficient of income distribution?

- 1) Flat rate income tax
- 2) Regressive income tax
- 3) Progressive income tax
- 4) Income tax at the rate of 80% for the richer half of the population and income tax at the rate of 20% for the poorer half.

9. Which of the following statements is correct?

- 1) The fundamental value of the shares in a firm is determined by expected future profits and systematic risk.
- 2) If there is no new information regarding the future profitability or systematic risk of a firm, but its share price keeps rising, the fundamental value must be increasing.

3) Buying a share at a price above its fundamental value in the hope that someone else would buy it from you at an even higher price is guaranteed to lose money.

4) All investors always agree on the fundamental value of the shares in a firm.

**10.** Consider the situation where the noise of a factory's production affects nurses in the dormitory next door. If there are no transaction costs to impede bargaining, which of the following statements is correct?

1) Whether the final output level will be Pareto efficient depends on who has the initial property rights.

2) The nurses would be better off in the bargained allocation if they initially had a right to undisturbed sleep than they would if the factory has the right to make noise.

3) If the factory has the right to make noise, it will prefer not to bargain with the nurses.

4) If the nurses have the initial rights, they will obtain all of the net social gain from factory production.

**11.** Which of the following statements is correct?

1) GDP can be measured either as the total spending on domestically produced goods and services, or the total value added in domestic production, or the sum of all incomes received from domestic production.

2) Both exports and imports are included in the measurement of GDP.

3) Government production is not included in the GDP.

4) Domestically consumed goods are included in GDP with more weight than exports.

**12.** Which of the following statements is correct?

1) Maintaining fiscal balance in a recession helps to stabilize the economy.

2) Automatic stabilizers refer to the fact that economic shocks are partly offset by households smoothing their consumption in the face of variable income.

3) The multiplier on a fiscal stimulus is higher when the economy is functioning at full capacity.

4) A fiscal stimulus can be implemented by raising spending to directly increase demand, or by cutting taxes to increase private sector demand.

**13.** Which of the following statements is correct?

1) When interest rates go down, asset prices go up.

2) The zero lower bound refers to the central bank's inability to set the real interest rate to below zero.

3) Quantitative easing involves the central bank lowering its official interest rate.

4) Interest rates cannot be set in a currency union.

**14.** Which of the following statements is correct?

1) In the short-run model the amount of some factor is fixed, while in the long-run model the amount of this factor can vary.

2) Labour-saving technological progress raises unemployment in both the short and long run.

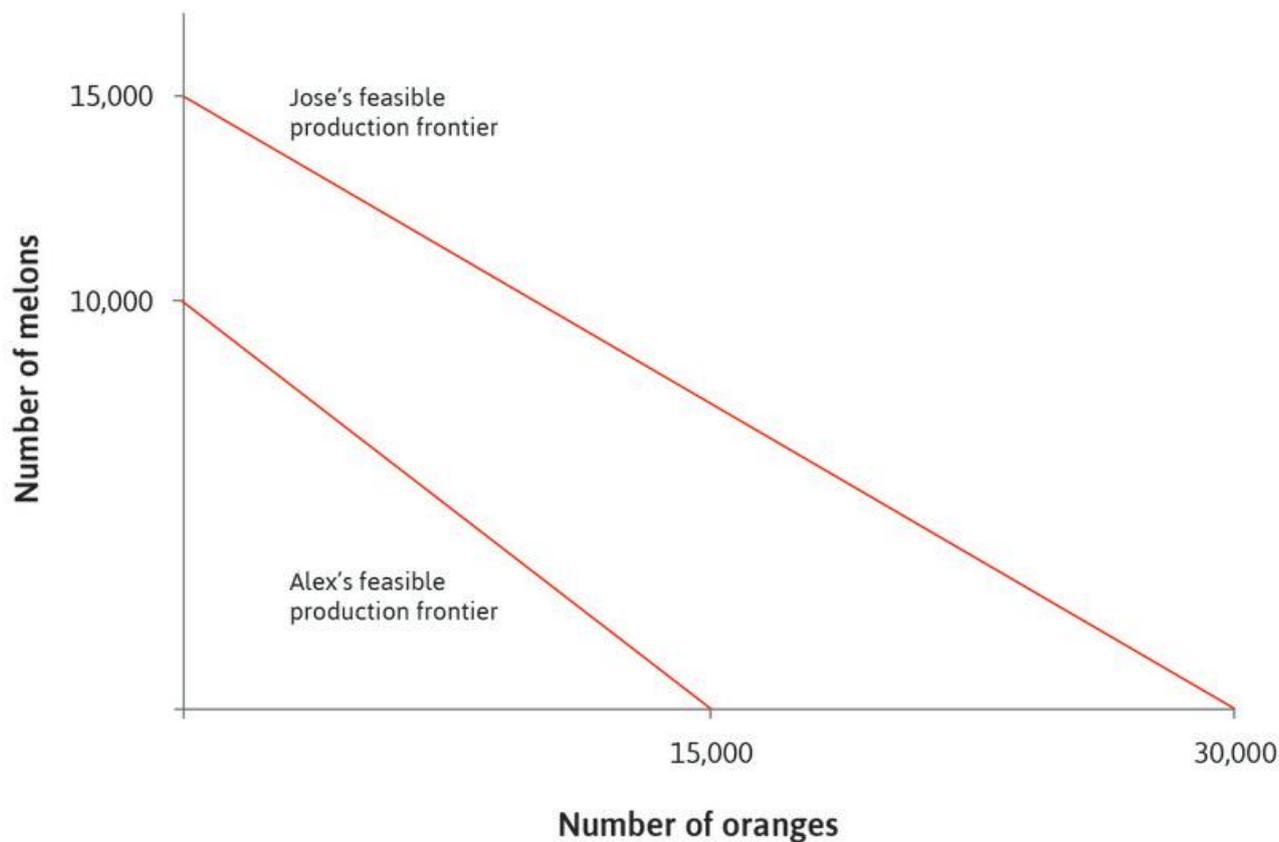
3) Firms are more likely to enter the market when the markup is low.

4) The markup is independent of the number of firms.

15. Which of the following statements is correct, *ceteris paribus*?

- 1) An increase in the trade surplus would lead to a decrease in a country's current account.
- 2) A country with zero trade balance but historically high foreign direct investment would always have a current account deficit.
- 3) An increase in remittances by a country's nationals abroad would lead to a lower current account.
- 4) An increase in the official aid payment sent to other countries means a lower current account.

16. The following diagram shows Alex's and Jose's feasible production frontiers for oranges and melons. (Resource allocation is equal between them.)



- 1) Jose has an absolute advantage in the production of melons but not oranges.
- 2) Jose has a comparative advantage in the production of melons.
- 3) With trade and specialization, Jose will specialize in the production of oranges while Alex will specialize in the production of melons.
- 4) The relative price of melons after trade will be 1.75.

17. Which of the following statements is correct?

- 1) Lump-sum taxes equal for all citizens decrease inequality.
- 2) Providing high-quality education to citizens is a way of raising the endowments of less well off people.
- 3) An increase in the minimum wage increases unemployment, leading to higher inequality unambiguously.

4) Non-complete contracts mean that workers can demand higher wages, leading to reduced inequality.

18. Which of the following statements is correct?

- 1) Bargaining between affected parties is always effective in reducing the inefficiencies caused by externalities, even in the presence of transaction costs.
- 2) The market price of pesticides is unlikely to reflect the full social cost of their use.
- 3) All externalities result in the good producing the external effect being overused.
- 4) Reducing air travel is an unfortunate and inefficient by-product of taxing flights.

19. Which of the following statements is correct?

- 1) There is no innovation in the absence of patents.
- 2) Longer patent duration will always lead to an increase in the probability of innovation.
- 3) There is trade-off between greater incentive to innovate from higher innovation rent income and the disincentive for potential innovators from using patented knowledge.
- 4) The optimal duration of patents is where the probability of innovation is maximized.

20. Which of the following cases represents the concept of a *natural experiment*?

- 1) People play Ultimatum game differently in different experimental setups
- 2) The placebo effect of a drug was confirmed in the laboratory
- 3) The difference between the economies of South and North Korea
- 4) People sometimes cooperate in the Prisoner's dilemma game conducted for writing papers in experimental economics