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# 2023 Taiwanese Economics Olympiad

Preliminary – Round 1: Literacy of Economics and Finance

## Question Booklet

**Time** Saturday, March 4, 2023, 10:00 to 11:30 (90 minutes)

**Location** Taipei Fuhsing Private School, **Taipei**  
Mingdao High School, **Taichung**  
Kaohsiung Station No. 1 Venue, **Kaohsiung**

### Instructions

- Fill in your contestant number in the boxes at the top.
- Use only a blue or black pen or pencil.
- Answer all questions on the answer sheet.
- Do all rough work in the question booklet.

### Information

- This is an individual-based round.
- The number of questions is 30. All answers will be graded (4 points for a correct answer, minus 1 point for an incorrect answer, and zero points for no answer).
- If not stated otherwise, consider all goods, services, and assets infinitely divisible.
- Numbers of firms and people may be only integers.
- You may leave the examination venue more than 60 minutes after this round begins.

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1. Which of the following statements regarding the Nobel Memorial Prize in Economic Sciences is correct?

- (1) The Prize has never been won by a woman.
- (2) The Prize was established according to Nobel's will.
- (3) The Prize is also awarded to political scientists and psychologists.
- (4) Keynes won the Prize for proposing monetary policy to combat economic recession.

2. Ginny, Henry, and Irene have the following abilities to produce apples, blueberries, and coconuts. Which of the following statements is correct?

	Apples	Blueberries	Coconuts
Ginny	30	10	20
Henry	10	40	30
Irene	20	30	20

- (1) If the three people specialize in production, they can produce 100 fruits.
  - (2) Since Henry can produce the most coconuts, he should produce coconuts.
  - (3) Because Ginny only has an absolute advantage in producing apples, she should produce apples.
  - (4) Because Irene does not have an absolute advantage, she does not have a comparative advantage.
3. The production abilities of Amber and Brian for strawberries ( $S$ ) and tomatoes ( $T$ ) are as follows. Which of the following statements is correct?

	Strawberries ( $S$ )	Tomatoes ( $T$ )
Amber	20	20
Brian	40	30

- (1) Amber's production possibility frontier is  $S + T = 20$ .
  - (2) Brian's production possibility frontier is  $S + T = 70$ .
  - (3) If they specialize, their production possibility frontier is  $S + T = 55$ .
  - (4) If they specialize, their production possibility frontier is  $S + T = 60$ .
4. Which of the following statements regarding the impact of ChatGPT's emergence on the labor market is incorrect?
- (1) ChatGPT may replace some counseling services, causing a decrease in demand.
  - (2) ChatGPT may create new types of jobs, causing an increase in quantity demanded.
  - (3) ChatGPT may encourage workers to join the AI industry, causing an increase in supply.
  - (4) ChatGPT may enable tech companies to offer better remuneration to attract talent, causing an increase in quantity supplied.
5. Which of the following statements regarding elasticity is correct?
- (1) When the elasticity of demand for a good is negative, the good may be a Giffen good.
  - (2) When the tax is fixed, the greater the elasticity of supply is, the more tax suppliers have to bear.
  - (3) When the income elasticity of demand for a good is negative, the good may be an inferior good.
  - (4) When the cross-price elasticity of two goods is negative, they may be complementary in production.



6. Which of the following statements regarding deadweight loss is always correct?
- (1) Deadweight loss increases when the government imposes tariffs.
  - (2) Deadweight loss increases when the government sets price ceilings.
  - (3) Deadweight loss increases when the government sets import quotas.
  - (4) Deadweight loss increases when the government enforces antitrust laws.
7. In a town, the supply of watermelons is  $S = P - 210$ , and the demand is  $Q = -\frac{1}{2}P + 255$ . If the town decides to impose a 10% sales tax on watermelons, what is the new quantity of watermelon transactions after taxation?
- (1) 80
  - (2) 90
  - (3) 100
  - (4) 110
8. Which of the following statements regarding economies of scale is correct?
- (1) The larger the production scale of a company, the greater the benefits of economies of scale.
  - (2) The 185 IC manufacturers in the Hsinchu Science Park are an example of economies of scale.
  - (3) Economies of scale exist because the average fixed cost continues to decline.
  - (4) The advantage of economies of scale stems from product formalization and standardization.
9. The manufacturing of a certain product exists in a perfectly competitive market of 100 manufacturers. The demand is  $Q = 205 - P$ , and the marginal cost of production is \$5. There are no fixed costs. If the 100 manufacturers form a cartel, how much will the total revenue of all manufacturers increase by?
- (1) 9,000
  - (2) 9,500
  - (3) 10,000
  - (4) 10,500
10. When a monopoly market of a good reaches an equilibrium, which of the following statements is incorrect?
- (1) The net profit will be maximized.
  - (2) The social surplus will not be maximized.
  - (3) The final price will be greater than the average cost.
  - (4) The marginal revenue, the marginal cost and the price of the good are equal.
11. Lin's Pastry is the only bakery in County Y. Mr. Yang from this county is considering entering the market, while Lin's Pastry is considering whether to lower its prices to respond. If their payoffs are as shown in the following table, which of the following statements is correct?

		Mr. Yang	
		Entering the market	Keeping out
Lin's Pastry	Lowering the price	(9,2)	(6,3)
	Keeping the price	(7,5)	(8,1)

Payoff: (Lin's Pastry, Mr. Yang)



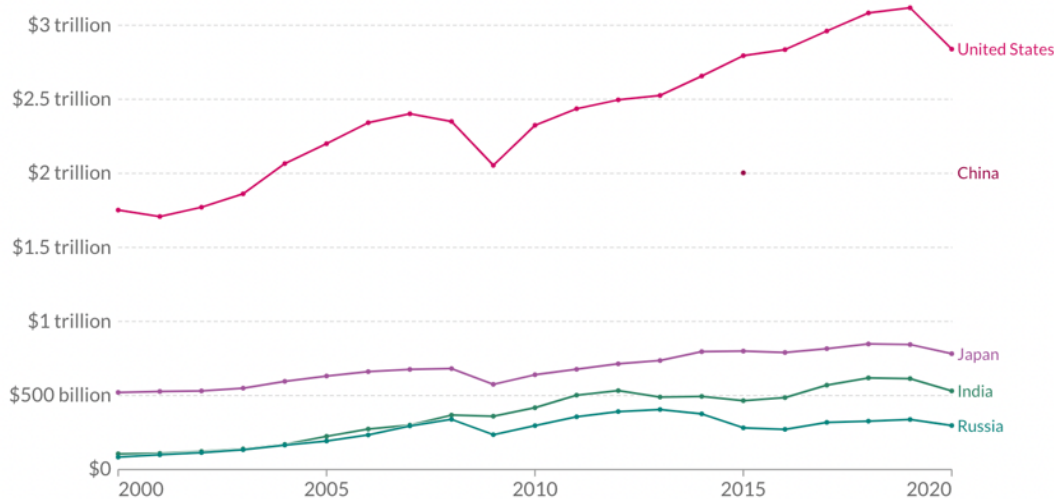
- (1) If Lin's Pastry chooses first, it will choose to lower its price.
  - (2) If Mr. Yang chooses first, he will choose to enter the market.
  - (3) The equilibrium of this game is similar to a Prisoner's Dilemma.
  - (4) The Nash Equilibrium is that Lin's Pastry maintains its original price and that Mr. Yang enters the market when both of them make a simultaneous choice.
12. Emily has a budget of \$200 and wants to buy candy ( $C$ ) and doughnuts ( $D$ ). If the unit prices of candy and doughnuts are \$5 and \$4, and Emily's utility function is  $U = C \times D$ , which of the following statements is correct?
- (1) Emily will buy the same quantity of candy and doughnuts.
  - (2) Emily will spend the same amount of money on candy and doughnuts.
  - (3) When Emily's budget becomes \$300, the income effect will cause Emily to buy fewer doughnuts, indicating that doughnuts are inferior goods.
  - (4) When the price of candy becomes \$2.5, the substitution effect will cause Emily to spend more on candy, indicating that candy and doughnuts are substitutes for each other.
13. James is currently applying for jobs and has found jobs on human resources websites have relatively lower salaries and fewer technical requirements, while job positions he finds satisfactory require internal referrals. Why is there a contrast like this on the labor market?
- (1) Moral hazard
  - (2) External costs
  - (3) Information asymmetry
  - (4) Supply exceeding demand
14. Company  $H$  has factories in both Country  $T$  and Country  $C$ . They observe that in Country  $T$ , the demand for labor is  $D_T = -2W + 320$ , and the supply is  $S_T = W - 40$ , while in Country  $C$ , the demand for labor is  $D_C = -W + 100$ , and the supply is  $S_C = 2W - 80$ . In order to reduce labor costs, Company  $H$  decided to transfer some of its production internationally. Which of the following statements is correct?
- (1) There will be 90 job vacancies in Country  $T$ .
  - (2) The unemployment rate in Country  $C$  will rise to 90%.
  - (3) Company  $H$  cannot reduce labor costs by transferring production.
  - (4) Company  $H$  will transfer its production capacity from Country  $T$  to Country  $C$ .
15. Which of the following statements is a cause of market failure?
- (1) The government levies a pollution tax on factories.
  - (2) Scalpers raise prices of concert tickets and resell them.
  - (3) During an epidemic, the government controls the price of masks.
  - (4) Banks require loan applicants to provide proof of financial strength.
16. Which of the following is not an example of internalization?
- (1) Insurance claims
  - (2) Patent protection
  - (3) Illegal parking fines
  - (4) Taxation on tobacco and alcohol



17. Carol is a world-class pianist and often plays the piano loudly at home, while her new neighbor Davis is a writer who needs a quiet environment to write. Which of the following statements is correct?
- (1) Carol can assert her right to play the piano loudly.
  - (2) A third party needs to intervene to resolve this matter fairly.
  - (3) If the two parties decide to negotiate a settlement, Carol would have to pay Davis.
  - (4) Carol's behavior has generated external benefits for Davis due to her outstanding piano skills.
18. Which of the following statements regarding goods is correct?
- (1) Knowledge is a public good.
  - (2) Public lectures are private goods.
  - (3) Teaching materials are club goods.
  - (4) Online courses are common goods.
19. Which of the following statements regarding economic schools of thought is incorrect?
- (1) Classical economics was influenced by liberalism.
  - (2) The Marxist school of economics agrees with capitalism.
  - (3) The neoclassical school of economics had a significant influence on the development of microeconomics.
  - (4) The Keynesian school of economics had a significant influence on the development of macroeconomics.
20. In the past decade, the quality of smartphones has greatly improved while the price has not drastically changed. What impact does this have on the economy?
- (1) The real GDP will rise.
  - (2) The inflation rate will rise.
  - (3) The nominal GDP will rise.
  - (4) The purchasing power will rise.
21. Which of the following statements regarding popular economic indicators is correct?
- (1) The HDI is used to evaluate standards of living with non-material aspects.
  - (2) PPP is used to evaluate production capacity without impacts of price level increase.
  - (3) GDP is used to evaluate standards of living with impacts of externalities taken into account.
  - (4) The PPI is used to evaluate price levels with changes in the cost of living taken into account.
22. Which of the following statements regarding inequality is correct?
- (1) If data points are plotted every ten people when drawing the Lorenz curve, the level of inequality measured will increase.
  - (2) In case everyone pays taxes honestly, measuring income by means of tax data differences may underestimate inequality.
  - (3) In addition to income inequality, the Lorenz curve can also be used to measure inequality in the distribution of education resources and land.
  - (4) The Gini coefficient shows the degree and source of inequality, so the government can formulate social welfare policies in light of this coefficient.



23. Which of the following statements is correct?
- (1) When stagflation occurs, the inflation rate will remain stable.
  - (2) When the real interest rate is negative, it indicates that an economic recession is occurring.
  - (3) If the nominal interest rate is lower than the real interest rate, it indicates the emergence of inflation.
  - (4) When the inflation rate is higher than the deposit interest rate, the purchasing power of money will decrease.
24. Which of the following is not a factor for the rise in prices during the COVID-19 pandemic?
- (1) Labor shortages have led to increased labor costs.
  - (2) Loose fiscal policy has led to an increase in money supply.
  - (3) Lockdowns and factory shutdowns have caused product shortages.
  - (4) Increased logistics demand has resulted in higher transportation costs.
25. Which of the following statements regarding policies during the COVID-19 pandemic is correct?
- (1) Open market operations increased exports in GDP.
  - (2) Relief for manufacturers increased investment in GDP.
  - (3) An interest rate cut increased private consumption in GDP.
  - (4) Distribution of stimulus vouchers increased government spending in GDP.
26. Which of the following statements regarding the imports of the chosen five countries in the figure below is correct?



**Imports of goods and services, 2000–2020**

Imports of goods and services represent the value of all those received from the rest of the world.

Data are in constant U.S. Dollars. This means values are corrected for inflation.

(Source: World Bank, OECD on Our World in Data)

- (1) Russia's decline is a result of economic sanctions.
- (2) China's lack of data is due to its implementation of a planned economy.
- (3) Japan's sluggish rise is due to the gradual progress of its domestic industry.
- (4) The changes in the import volume of the United States are easily affected by economic cycles.



27. What characteristic of grain led people in the agricultural era to choose it over fruit as currency?
- (1) A store of value
  - (2) A unit of account
  - (3) A medium of exchange
  - (4) A standard of deferred payment
28. More than 100 countries worldwide are now developing central bank digital currencies (CBDCs). Which of the following statements regarding CBDCs is incorrect?
- (1) CBDCs are decentralized currencies.
  - (2) CBDCs can help control financial crimes.
  - (3) CBDCs can make monetary policy more effective.
  - (4) CBDCs may cause commercial banks to lose their functions.
29. Which of the following income statements (in millions USD) is unreasonable?

(1) Apple Inc.	
Net Sales	117,154
Cost of Sales	66,822
Operating Expense	14,316
Tax	5,625

(2) Hon Hai Precision Industry Co.	
Net Sales	58,220
Cost of Sales	1,970
Operating Expense	54,633
Tax	317

(3) McDonald's Corp	
Net Sales	5,927
Cost of Sales	2,518
Operating Expense	1,245
Tax	435

(4) Walmart Inc.	
Net Sales	152,871
Cost of Sales	115,522
Operating Expense	31,462
Tax	1,149

30. Frank is 60 years old this year and considering purchasing an annuity plan before retirement. The annuity plan will pay him \$100,000 each year for ten consecutive years starting at age 65. If the discount rate remains at 10%, how much is Frank willing to spend on this annuity plan?
- (1) \$419,682
  - (2) \$714,457
  - (3) \$736,669
  - (4) \$1,000,000

**END OF QUESTIONS**