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2022 Taiwanese Economics Olympiad

Preliminary – Round 1: Literacy of Economics and Finance

Question Booklet

Time Saturday, March 5, 2022, 10:00 to 11:30 (90 minutes)

Location Taipei Fuhsing Private School, Taipei *or*
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 books is credited as the beginning of economics?
 - (1) *Das Kapital*
 - (2) *The Wealth of Nations*
 - (3) *Principles of Economics*
 - (4) *The General Theory of Employment, Interest, and Money*

 2. Amber and Boris run a bakery that sells only two goods, cookies (C) and doughnuts (D). Suppose the production possibility frontier of Amber is $2C + 3D = 300$, and that of Boris is $3C + 5D = 600$. Which of the following statements is correct?
 - (1) The production possibility frontier of them working together is $5C + 8D = 900$.
 - (2) If the bakery should have 90 doughnuts ready per day, they can produce 300 cookies at most.
 - (3) If the bakery should have 275 cookies ready per day, they can produce 150 doughnuts at most.
 - (4) If there is division of labor, Amber should produce doughnuts, and Boris should produce cookies.


 3. Government-issued vouchers during the Covid-19 recession are intended to increase
 - (1) the supply of necessity goods.
 - (2) the demand of necessity goods.
 - (3) the supply of luxury goods.
 - (4) the demand of luxury goods.

 4. Which of the following shifts differs from all the others?
 - (1) Nice weather enhances the quality of fruit, and the quantity sold of pineapples increases.
 - (2) The price of cocoa beans decreases internationally, and the quantity sold of chocolate increases.
 - (3) McDonald's invites the boy band BTS as product ambassadors, and the quantity sold of McNuggets increases.
 - (4) The government decides to increase the health surcharge next month, and the quantity sold of cigarettes increases.
-  surcharge 附加費
5. Which of the following statements regarding elasticity is correct?
 - (1) If a good follows the law of demand, then its price elasticity of demand is positive.
 - (2) If two goods are complements, then their cross-price elasticity of demand is positive.
 - (3) If a good is an inferior good, then its income elasticity of demand is positive.
 - (4) If a good follows the law of supply, then its price elasticity of supply is positive.

 6. Which of the following government policies enlarges deadweight loss?
 - (1) Tariffs imposed on imports
 - (2) Taxes on tobacco products
 - (3) Price control over water charges
 - (4) Enforcement of the Consumer Protection Act




7. Which of the following is not a compensation for Taiwanese producers in international trade?
- (1) Tariffs
 - (2) Quotas
 - (3) Production subsidies
 - (4) Guarantees for purchase prices
8. Countries A and B are going to have international trade. Suppose country A has a demand curve of a good $D_A = -3P + 450$ and a supply curve $S_A = 2P - 150$, and that country B has a demand curve of the same good $D_B = -2P + 220$ and a supply curve $S_B = 3P - 180$. Which of the following statements is correct?
- (1) Country A will be an exporting country.
 - (2) If a tariff of \$10 is effective, the final price of the good in country A will be \$110.
 - (3) If there are no restrictions on trade, the final price of the good in country A will be \$100.
 - (4) If there is an import quota of 120 units, the final price of the good in country A will be \$96.
9. Chloe gave up her job as an engineer and transformed her own house into a café. Which of the following statements is incorrect?
- (1) House rent is a fixed cost.
 - (2) Utility bills are an explicit cost.
 - (3) Coffee beans are a variable cost.
 - (4) Income as an engineer is an implicit cost.
10. Suppose the demand curve of grapes (G) on the market is $D_G = -\frac{2}{3}P + 200$, and that the supply curve is $S_G = \frac{2}{3}P + 100$. The unit of quantity is kilograms. If the government is going to impose a tax of 50% of the grape price as a consumption tax, what is the quantity traded after taxed?
- (1) 120 kilograms
 - (2) 130 kilograms
 - (3) 140 kilograms
 - (4) 150 kilograms
11. Which of the following statements regarding a perfect competition market is correct?
- (1) Demand curves on the market are horizontal.
 - (2) Consumers are price givers rather than firms.
 - (3) When a firm's net profit goes negative, it will just shut down.
 - (4) When a market equilibrium is reached, there are still changes on the market.
12. Which of the following statements regarding a monopolized market is correct?
- (1) If the price of a good is higher on the market, a firm's net profit is higher.
 - (2) If a firm is a price giver of a good, it is a monopoly.
 - (3) If a firm applies price discrimination, it can reduce deadweight loss.
 - (4) Since a firm has already monopolized a good, it can ignore antitrust laws.

13. Suppose a monopoly notices that the demand curve of its goods is $D = 50 - \frac{1}{2}P$ (where D is an integer) on the market, and that the unit cost of the goods is \$20. If the firm applies first-degree price discrimination, how much is the profit higher than the single market price?
- (1) \$700
 - (2) \$760
 - (3) \$800
 - (4) \$840
14. Which of the following statements is incorrect?
- (1) Compared with a monopoly market, there is less control over prices on an oligopolistic market.
 - (2) Compared with a monopoly market, there are fewer barriers on a monopolistic competition market.
 - (3) Compared with a perfect competition market, there is more uniqueness of goods on an oligopolistic market.
 - (4) Compared with a perfect competition market, there is more asymmetric information on a monopolistic competition market.
-  asymmetric 不對稱的
15. Suppose there are only two countries T and C in the world. As for country T's internal labor market, the demand curve is $D_T = -2P + 240$, and the supply curve is $S_T = 3P - 110$. As for country C's internal labor market, the demand curve is $D_C = -P + 130$, and the supply curve is $S_C = 2P - 20$. Which of the following statements is correct?
- (1) If both countries have no interaction, the equilibrium wage is 50, and the equilibrium quality of workers is 80 in country T.
 - (2) If both countries have no interaction, and country T has a minimum wage of 90, the unemployment rate is 40%.
 - (3) If international travel is possible, the international equilibrium wage is 62.5.
 - (4) If international travel is possible, country T can attract 100 workers from country C.
16. Which of the following statements regarding goods is incorrect?
- (1) Forests are common goods.
 - (2) Cellphones are private goods.
 - (3) Amusement parks are club goods.
 - (4) Application service of driver's licenses is a public good.
17. Which of the following statements regarding externalities is correct?
- (1) All externalities can be addressed by the market.
 - (2) If something has publicness, there is an externality.
 - (3) An externality should be addressed by a neutral third party.
 - (4) If something has an external benefit, there is no external cost.



18. Which of the following expenditures of Derek should be included in the GDP of the month?

- (1) House rent
- (2) A doll bought in a charity sale
- (3) A presold ticket of an exhibition
- (4) A cash gift for celebrating a friend's wedding


 expenditure 開支

19. Which of the following statements is correct?

- (1) When the market rate decreases, money supply increases.
- (2) When money supply increases, the inflation rate increases.
- (3) When the market rate increases, the inflation rate increases.
- (4) When the inflation rate increases, the unemployment rate decreases.

20. Which of the following characteristics of currency underlies the mechanism of labor insurance?

- (1) A store of value
- (2) A measure of value
- (3) A medium of exchange
- (4) A standard of deferred payment

 underlie 作為……的基礎

21. Which of the following measures taken by the government against a pandemic is incorrect?


- (1) Repurchasing national debts is a fiscal policy tool.
- (2) Lowering the market rate is a monetary policy tool.
- (3) Lowering the reserve ratio is a monetary policy tool.
- (4) Financial subsidies for business operations are fiscal policy tools.

22. Armed conflicts between Russia and Ukraine have triggered different positions expressed by different countries. Predicted payoffs* of both the US and Russia are listed in the table below. Which of the following events is most likely to happen?

		Russia		
		invades Ukraine	maintains the status-quo	withdraws troops
US	supports Ukraine	(45, 40)	(40, 15)	(35, 0)
	supports Russia	(5, 90)	(5, 35)	(10, 0)
	does nothing	(35, 60)	(40, 25)	(30, 0)

*Payoff: (US, Russia)

- (1) The US will choose to support Russia, and Russia will choose to continue invasion.
- (2) The US will choose to support Ukraine, and Russia will choose to withdraw troops.
- (3) The US will choose to support Ukraine, and Russia will choose to continue invasion.
- (4) The US will choose to do nothing, and Russia will choose to maintain the status-quo.


 status-quo 現狀

23. Elisa just bought a new house, but she just noticed neighbors renting out houses in her community for daily rentals. This has made her worried about future living quality issues. If Elisa wants to negotiate with neighbors with reference to the Coase theorem, which of the following is key to success in negotiation?

- (1) The severity of external costs
- (2) The initial distribution of property rights
- (3) The amount of transaction costs on the market
- (4) The amounts of opportunity costs on both sides

24. Which of the following statements regarding an NFT (non-fungible token) is incorrect?

- (1) An NFT is a currency.
- (2) The development of NFTs is less than 10 years old.
- (3) Transactions of NFTs are mostly made in Ethereum and Bitcoin.
- (4) An NFT can represent any property right of a digital form of creation.

 fungible 可取代的

25. Which of the following portfolios has the highest risk?

- (1) Indices and bonds
- (2) Futures and options
- (3) Funds and real estates
- (4) Deposits and exchanges

26. The following table is an excerpt from Microsoft's 2021 annual report. What are the gross margin and net margin of Microsoft in 2021?

Item	Amount (in million US\$)
Product Revenue	71,074
Service Revenue	97,014
Cost of Product	18,219
Cost of Service	34,013
Research and Development Cost	20,716
Sales and Marketing Cost	20,117
General and Administrative Cost	5,107
Tax	9,831

- (1) Gross margin = 41.59%; net margin = 33.18%
- (2) Gross margin = 41.59%; net margin = 35.75%
- (3) Gross margin = 68.93%; net margin = 35.75%
- (4) Gross margin = 68.93%; net margin = 41.59%

27. Which of the following deposit plans has the highest annual rate of return?

- (1) Interests of 1% paid once monthly
- (2) Interests of 6% paid once half-yearly
- (3) Interests of 12% paid once annually
- (4) The annual rates of return are the same for the three plans above.



28. Mango launches a NT\$30,000 new Mango Phone with a one-year warranty. An extended warranty for another year named MangoCare is optional for consumers. Suppose in the first year of purchase, this phone model has a probability of 30% to be broken, and the repairment cost is NT\$2,000; in the second year, it also has a probability of 30% to be broken, and the repairment cost is NT\$5,000. Given the discount rate of 5% on the market, how should MangoCare be priced?
- (1) NT\$572
 - (2) NT\$1,361
 - (3) NT\$1,500
 - (4) NT\$1,933
29. Frank analyzed some portfolios on the market and got an efficient frontier $R = \sqrt{225 - (r - 25)^2}$, where R stands for return (%) and r stands for risk (%). If Frank's utility is $\frac{R^2}{r^2}$, what are the return and risk in the portfolio that suits him the most?
- (1) Return = 9%; risk = 13%
 - (2) Return = 11%; risk = 15%
 - (3) Return = 12%; risk = 16%
 - (4) Return = 14%; risk = 18%
30. At the beginning of 2022, Ginny bought a bond which with a face value of NT\$10,000. Suppose the coupon payment is 5%, and that the yield is 10%. The maturity of this bond is 5 years. If Ginny wants to resell the bond at the end of 2023, for how much should she sell it?
- (1) NT\$8104.61
 - (2) NT\$8756.58
 - (3) NT\$9806.58
 - (4) NT\$11500.00

END OF QUESTIONS