Hong Kong Baptist University
ECON 1005 Principles of Economics I (Microeconomics)
Semester 1, 2025/26

Date: 25 Oct, 2025 **Time allowed**: 1 ½ hours

Midterm Examination (VERSION A)

This paper contains TWO parts. The full mark of the test is 100, which accounts for **15%** of your total course grade.

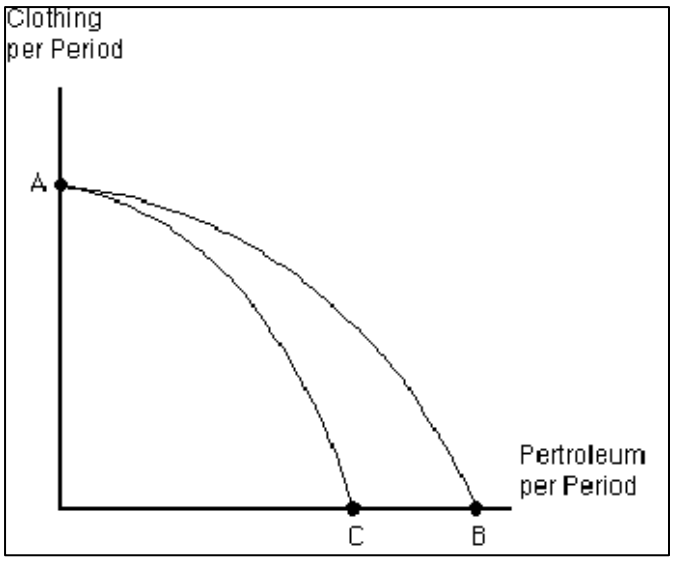
Part A Multiple Choice Questions (50%). Attempt ALL questions using a multiple-choice answer sheet.

1. Economics focuses on
   a. how to allocate scarce resources to satisfy unlimited wants
   b. how governments select public policies.
   c. how to make profits from financial trading.
   d. how to distribute wealth equally.
   e. how to manage the finances of companies.

2. The opportunity cost suggests of a particular choice should be measured by the
   a. price of the good chosen.
   b. price of the good divided by income.
   c. value of the best alternative forgone.
   d. amount of the good consumed.
   e. sum of the costs of all foregone opportunities.

3. Suppose a freelance coder earning $800 per day skips two days of work to attend a $100 seminar. What is the opportunity cost of attending the seminar?
   a. $100 and it is an explicit cost.
   b. $1,600 and it is an explicit cost.
   c. $1,600 and it is an implicit cost.
   d. $1,700, of which $1,600 is an explicit cost and $100 is an implicit cost.
   e. $1,700, of which $1,600 is an implicit cost and $100 is an explicit cost.

4. You started a YouTube channel and spent $50,000 on equipment, but your operations keep losing money. Now, someone offers to buy your equipment for $20,000. Which statement is correct about deciding whether to sell?
   a. You should reject the offer because you originally paid more than $20,000 for them.
   b. The $50,000 you spent is an implicit cost that should affect your decision.
   c. The $50,000 you spent is a sunk cost and should not affect your decision now.
   d. If you sell the equipment, your opportunity cost is $20,000.
   e. You should never sell your equipment, no matter the offer.



5. Which of the following best explains the outward shift of the production possibilities frontier (PPF) from AC to AB, as shown in the figure above?
   a. There are technical improvements in producing both petroleum products and clothing
   b. There is a new method that increases clothing production, but it does not affect petroleum production
   c. The number of workers available to make petroleum products and clothing decreases
   d. Major oil production plants are shut down to protect the environment
   e. A new technology, such as fracking, is discovered, making oil production more efficient

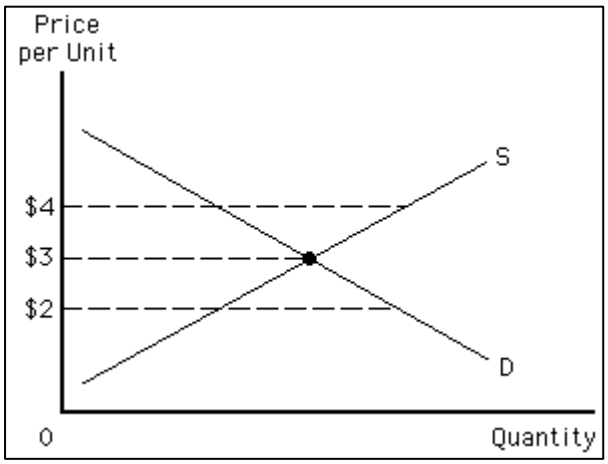
6. A country currently is using all its land to produce coffee and cocoa. However, the land best suited for growing cocoa is being used for coffee, and the land best suited for coffee is being used for cocoa. Which of the following statements is true?
   a. The country is operating outside its production possibilities frontier (PPF).
   b. The country is operating along its production possibilities frontier (PPF).
   c. Coffee production must be sacrificed if the country increases cocoa production.
   d. Cocoa production must be sacrificed if the country increases coffee production.
   e. The country is operating inside its production possibilities frontier.

7. In a perfectly competitive market,
   a. there are only a few buyer and sellers.
   b. each seller offers a slightly different (differentiated) product.
   c. each buyer or seller is too small to influence the market price.
   d. government intervention is required to keep prices *fair*.
   e. the government decides how goods are distributed.

8. A decrease in the price of a particular good, with all other things constant, causes
   a. a shift to a different demand schedule with higher quantities demanded
   b. a shift to a different demand schedule with lower quantities demanded
   c. a movement along a given demand curve to a lower quantity demanded
   d. a movement along a given demand curve to a higher quantity demanded
   e. no movement along a given demand curve unless supply also changes

9. Starbucks coffee and Luckin coffee are substitutes. If the price of Starbucks coffee decreases, it will result in a(n)
   a. increase in the demand for Starbucks coffee
   b. increase in the supply of Luckin coffee
   c. decrease in the quantity demanded of Starbucks coffee
   d. decrease in the demand for Luckin coffee
   e. increase in the demand for Luckin coffee

10. In a competitive market, excess supply (surplus) of a good exists whenever
   a. the current price is below the equilibrium price
   b. resources are scarce
   c. the quantity demanded at the current price exceeds the quantity supplied
   d. sellers are subject to the constraints imposed by input prices and technology
   e. the current price is above the equilibrium price



11. The above figure represents the face mask market during the Covid-19 pandemic. If the government imposes a price ceiling of $2.00, the result will be
   a. equilibrium
   b. no different than before the price ceiling is imposed
   c. the demand curve will shift rightward
   d. a shortage
   e. a surplus

12. Providing buyers with a $10,000 subsidy per electric vehicle would benefit
    a. a buyer by exactly $10,000
    b. a seller by exactly $10,000
    c. the buyer and the seller in such a way that they would split the $10,000.
    d. the buyer and the seller in such a way that they would each get $10,000.
    e. the buyer and the seller in such a way that they would each get more than $10,000.

13. Daniel's consumption of burger drops from 9 per week to 6 per week when the price rises from $5 to $7. Using *midpoint formula*, his price elasticity of demand for burger equals
    a. 0.83
    b. 1
    c. 1.2
    d. 1.75
    e. 2

14. An online game provider tends to keep raising the price of its in-game purchase items, its revenue should
    a. always increase
    b. increase as long as its demand is price inelastic
    c. increase as long as its demand is price elastic
    d. decrease as long as its demand is price inelastic
    e. remain unchanged

15. For a straight-line downward-sloping demand curve, as price rises,
    a. demand becomes more price inelastic
    b. demand becomes more price elastic
    c. demand is always unit elastic
    d. demand rises and then falls
    e. price elasticity stays constant

16. Demand for a good is likely to be more elastic
    a. the larger the spending on the good as a share of the buyer's budget.
    b. in the short run than in the long run.
    c. if the good is a necessity to consumers.
    d. the smaller the number of substitute goods available.
    e. if the good is used together with another product that consumers have committed themselves to.

The table below shows the price elasticities of demand for two Tesla models (electric cars). Use the information provided to answer **Questions 17 – 18**.

Own-price and Cross-price Elasticities of Demand for Electric Vehicles (Leard & Wu, 2023)		
	Own-price elasticity	**Cross-price elasticity:** with respect to the price of **Chevy Bolt**
Tesla Model 3	-3.73	3.92
Tesla Model S	-2.96	0.35

17. Which of the following statements is incorrect?
    a. The demand for Model S is less elastic than the demand for Model 3.
    b. The demand for both models is elastic.
    c. The Chevy Bolt is a substitute for both Tesla models.
    d. The Chevy Bolt is a closer substitute to Model S than to Model 3.
    e. When the price of the Chevy Bolt increases, the demand for both Tesla models increases.

18. The absolute value of price elasticity of demand for overall electric vehicles is likely:
    a. Above 3.73
    b. Below 2.96
    c. Between 2.96 and 3.73
    d. Perfectly elastic
    e. Perfectly inelastic

19. Suppose consumers considered counterfeit products, like LaFuFu, as an inferior good, then
    a. its demand curve will shift to the left if buyers' incomes increase, and its income elasticity of demand is positive.
    b. its demand curve will shift to the right if buyers' incomes increase, and its income elasticity of demand is positive.
    c. its demand curve will shift to the right if buyers' incomes increase, and its income elasticity of demand is negative.
    d. its demand curve will shift to the left if buyers' incomes increase, and its income elasticity of demand is negative.
    e. there is insufficient information to tell.

20. The marginal cost of output rises because the marginal product of labor
    a. is positive
    b. is negative
    c. increases
    d. decreases
    e. remains constant

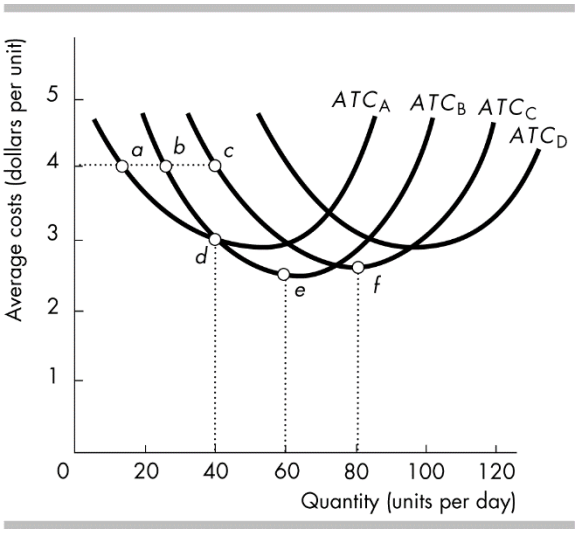
Quantity of Labor	Tons of Lithium Mined
1	80
2	180
3	300
4	480
5	555

21. The table above shows the tons of lithium a mining company can produce per week by hiring more workers, while keeping capital equipment and technology constant. For which worker does the marginal product of labor begin to decline?
    a. The 2nd worker
    b. The 3rd worker
    c. The 4th worker
    d. The 5th worker
    e. The marginal product of labor does not decline.

22. If marginal cost is lower than the average total cost, then
    a. profits are increasing
    b. marginal cost is decreasing
    c. average total cost remains constant
    d. average total cost is increasing
    e. average total cost is decreasing

23. An indivisible input
    a. is a fixed input.
    b. can only be adjusted in large or whole units, not in small amounts.
    c. is a variable input.
    d. cannot be legally employed.
    e. can be easily adjusted in small amounts.

24. When long-run average cost increases as output rises, it is due to
    a. rising average fixed cost.
    b. economies of scale.
    c. diminishing marginal returns.
    d. constant returns to scale.
    e. none of the above.



25. The average total cost curves for capital levels A, B, C and D are shown in the figure above. Suppose the firm is currently producing 80 units per day using capital level C. If the firm wants to lower its output level to 50 units per day in the long run, it should use capital level _____. The average cost of producing 50 units per day in the long run is _____ than the average cost in the short run.
    a. A, lower
    b. B, lower
    c. C, lower
    d. C, higher
    e. D, higher

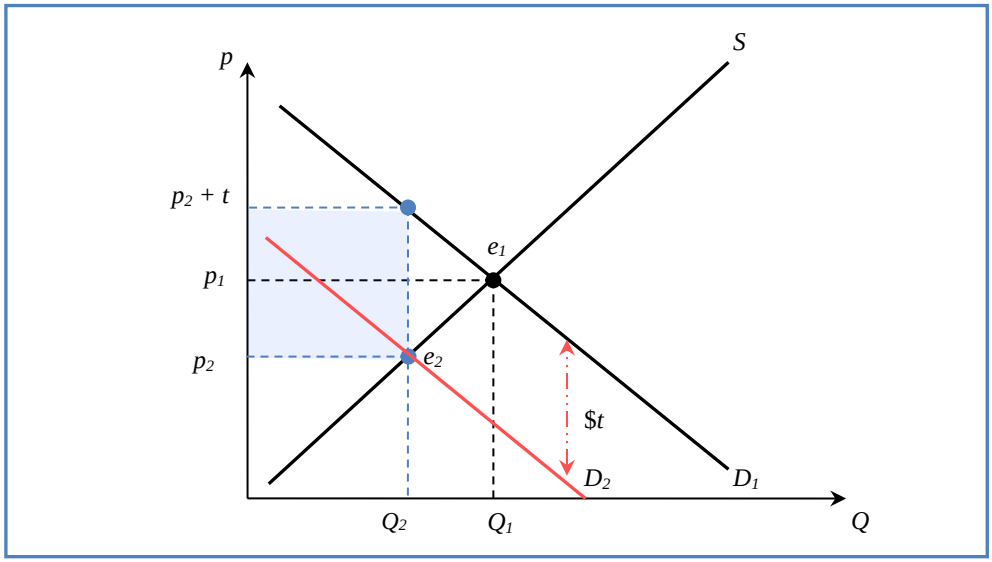
26. Your test paper is **Version A**. Please mark it down.
    a. version A
    b. version B

Part B Application Question (50%). Attempt BOTH question on the answer book provided.

Question 1 (28 marks)

Many states in the U.S. have **sales tax holidays**, which are periods when sales tax on certain goods, such as clothing and footwear items costing less than $100, is temporarily removed. Supporters say these holidays help shoppers and local stores, while critics argue they mostly change the timing of purchases and are not effective at boosting sales[1].

a. Using a supply and demand diagram, explain the impact of a sales tax (collected from buyers) on the market for clothing. How would a temporary sales tax holiday (removal of the tax) affect the market? **(15 marks)**



When the government collects a sales tax of $$t$ from buyers, it shifts the demand curve downward by $$t$ from D_1 to D_2. The market equilibrium changes from e_1 to e_2. Therefore, the equilibrium price would decrease from p_1 to p_2 and the equilibrium quantity decreases from Q_1 to Q_2. With tax, the sellers receive less per unit. However, the consumers pay more per unit (after tax), i.e. $p_2 + t$. The local government will receive the total amount of $t \times Q_2$.

When a temporary sales tax holiday is introduced, the sales tax is removed for a limited period. The market essentially reverts to the original "before tax" situation. Both buyers and sellers benefit in the short term: buyers pay less, and sellers receive more and more clothes are sold.

[1] Sales tax holidays under fire as CT (Connecticut) launches its promotion, *CT Mirror*, 13th August, 2025.

b. Some analysts argue that sales tax holidays mainly affect the timing of consumer purchases. Explain the economic reasoning behind this argument. **(5 marks)**

As consumers **expect** the price of clothes to decrease during a sales tax holiday, they may wait to buy them until the holiday. The demand for clothing before the holiday would decrease. As **the holiday doesn't increase the overall need for clothing**, shopping just shifts from before or after the holiday to during the holiday. The net effect over a longer period may be minimal, as consumers simply change the timing rather than the total volume of purchases.

c. Many items subject to sales tax holidays, such as clothing and footwear, are relatively low-cost. Given that the price elasticity of demand for clothing and footwear is 0.761 (Zereyesus et al., 2025[2]), discuss the likely effectiveness of a sales tax holiday in boosting sales. **(8 marks)**

A price elasticity of demand of 0.761 means demand for clothing and footwear is **inelastic**: **a 1% decrease in price leads to only a 0.761% increase in quantity demanded**, ceteris paribus. During a sales tax holiday, the price for these items decreases (since sales tax is removed), but because demand is inelastic, the increase in quantity sold will be **proportionally** small. Therefore, while a sales tax holiday does increase sales, the overall effect is limited.

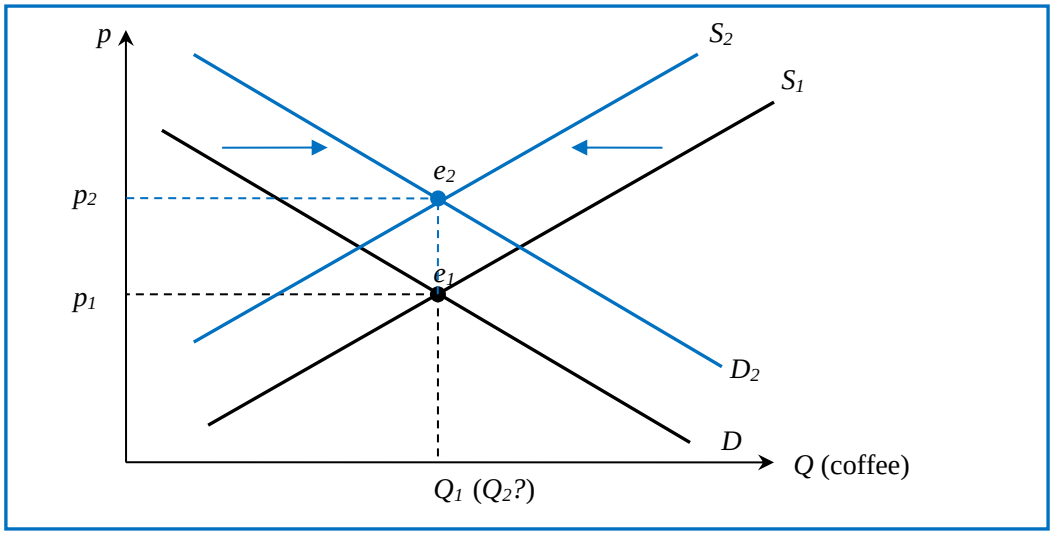
Question 2 (22 marks)

In 2025, global **coffee** prices have increased by nearly 60% due to climate-related supply disruptions in Brazil, Vietnam, and Indonesia, while global coffee consumption continues to grow by about 2% each year[3].

a. Using a supply and demand diagram, explain how these factors have affected the equilibrium price and quantity in the coffee market. How would higher coffee prices affect the cost of a typical coffee maker? Which cost curves will be affected in the short run? **(12 marks)**

[2] Zereyesus, Y.A., Xia, T., Nava, N.J., Li, X., and Cardell, L., "International Income and Price Elasticity Estimates: An Update," USDA, Economic Research Service, 2025.

[3] Analyst explains why coffee prices are rising in 2025, *Investing.com*, 23th March, 2025.



Climate-reduced supply disruptions in Brazil, Vietnam, and Indonesia reduce the supply of coffee beans. It **shifts the supply curve leftward**. At the same time, coffee consumption is growing steadily, it **shifts the demand curve rightward**. As a result, the **equilibrium price of coffee will rise** from p_1 to p_2 and **the impact on equilibrium quantity is ambiguous**, depending on the relative size of the increase in demand or the decrease in supply.

Makers (coffee shops, manufacturers) face higher **variable costs** as coffee beans become much more expensive; their cost per cup or product rises. Short-run cost curves impacted: **Average Variable Cost (AVC), Marginal Cost (MC), Average Total Cost (ATC)**.

Several food technology (FoodTech) companies, such as Prefer Coffee (Singapore) and Atomo Coffee (USA), have introduced **"beanless" coffee** alternatives[4]. Instead of growing coffee beans, these companies use microbial fermentation to produce coffee-like flavors, often from upcycled food waste or plant-based ingredients. This reduces carbon footprint, land use, and water consumption, and aims for scalable, cost-effective production[5].

b. Explain, how the use of new technology would affect the cost for Prefer or Atomo Coffee. Which cost curves will be affected in the short run? **(10 marks)**

Microbial fermentation and use of upcycled food waste reduces reliance on traditional coffee beans (whose cost has spiked). Inputs likely cost less and are less volatile. Using beanless coffee would lower the **variable cost** of making each cup of coffee, which shifts the **marginal cost (MC), average variable cost (AVC), and average total cost (ATC) curves** down in the short run. However, the average fixed cost (AFC) is not affected, because fixed costs are typically not affected by the adoption of this new technology. For Prefer or Atomo Coffee, if they're already using the technology, any investment in factories, fermentation equipment, or R&D will be a sunk

[4] Prefer's Fermentation-Driven Future: Rethinking Coffee and Cocoa for a Climate-Constrained World, *CarbonWire*, 9th October, 2025.

[5] FoodTech 2025: The Top Breakthrough Technologies & Investment Outlook From Leading VCs, *Forbes*, 8th January, 2025.

cost in the short run. Their ongoing fixed costs do not change immediately with increased production or efficiency.

However, in the long run, for firms starts to adopt this new technology, the new technology might require significant capital investment (e.g., building new facilities or buying equipment), **fixed costs might increase** when these investments are made.

– The End –