※ 注意：請用 2B 鉛筆作答於答案卡，並先詳閱答案卡上之「畫記說明」。
25 題複選題, 每題 4 分, 不倒扣。

1. You have an income level I=200 and the Cobb-Douglas utility U(x,y) = xy. If prices of the two goods are $P_x=3P_y=3$, then your utility-maximizing demands (x*, y*) will satisfy:
   (A) x* = y*
   (B) x* = 2y*
   (C) x* = 3y*
   (D) y* = 3x*
   (E) y* = 2x*

2. If the demand for good X declines as the price of another good Y increases, these two goods are called:
   (A) complements
   (B) substitutes
   (C) homogeneous goods
   (D) independent goods
   (E) Giffen goods

3. The indifference curves of a consumer over two normal goods (X, Y) must have the property:
   (A) They all have the same slopes.
   (B) They will never intersect.
   (C) They should be positively sloped.
   (D) They can only intersect once.
   (E) They may not exist

4. Arrow's impossibility theorem asserts five axioms. Which of the followings is not among them:
   (A) non-dictatorship
   (B) no voting cycles
   (C) no strategic behaviors
   (D) independence from irrelevant alternatives
   (E) Pareto principle

5. Weak axiom of revealed preference (WARP) is a _____ condition for consumer rationality:
   (A) necessary
   (B) sufficient
   (C) necessary and sufficient
   (D) non-relevant
   (E) presumptive

6. John has an income level I=200 and the utility function U(x,y) = min{x, y}. If prices of these goods are Px=2Py=2, then his utility-maximizing demand (x*, y*) must satisfy:
   (A) x* = y*
   (B) x* = 2y*
   (C) x* = 4y*
   (D) x* = y*/2
   (E) x* = y*/4

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7. Stacy has an income level I=200 and the utility function U(x,y) = x+y. If prices of these two goods are 2Px=Py=2, then her demand (x*, y*) must be:
   (A) x* = 0
   (B) x* = I/2
   (C) y* = 0
   (D) y* = I/2
   (E) x* = y*

8. Mary has a strictly quasi-concave utility function, and has the same income I=200 now (the current year) as well as three years ago (the base year). She consumes only three goods (x, y, z). When the prices of these goods were (Px, Py, Pz) = (5, 5, 5) three years ago, her most favorite bundle was (10, 20, 10). Now the prices become (10, 6, 3), and her choice becomes (5, 15, 20). What can you infer from her choices?
   (A) She is better off now than she was 3 years ago
   (B) She is worse off now than she was 3 years ago
   (C) She is equally well off now as 3 years ago
   (D) She is not sure.
   (E) We do not know

9. If a public good *Y* is provided by individual consumers voluntarily, its aggregate equilibrium level, compared with the optimal level, will be:
   (A) higher
   (B) lower
   (C) equal
   (D) maybe higher or lower
   (E) cannot compare

10. Which statement of the followings is false:
   (A) Normal goods must be ordinary
   (B) Ordinary goods must be normal
   (C) Normal goods must have downward-sloping demands
   (D) Income-inferior goods can be ordinary
   (E) Income-inferior goods can be Giffen

11. A competitive market has a market demand *D(P)* and a market supply *S(P)*. If the government imposes a quantity tax on sellers, then:
   (A) the sellers will bear all tax burden
   (B) the buyers will bear all tax burden
   (C) buyers and sellers will equally share the tax burden
   (D) their burden will depend on their elasticities
   (E) no one bears any tax durden

12. If public good levels are to be determined by simple majority in a group, the voting outcomes will be:
   (A) equal to their social optimal levels.
   (B) no lower than their social optimal levels.
   (C) no greater than their social optimal levels.
   (D) greater or lower than their social optimal levels.

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(E) always zero.

13. A producer has the following production function:

$$y = (lk)^{1/3},$$

where y is the output, l and k are inputs. The price of l is \$1 and the price of k is \$2. In the short run, the quantity of k is a fixed at 1 unit while the quantity of l is freely adjustable. Let $LRTC(y)$ and $SRTC(y)$ denote the long-run total cost function and the short-run total cost function, respectively. Which of the following statement is true?

(A) $SRTC(2) = \$12$
(B) $SRTC(2) = \$20$
(C) $LRTC(2) = \$8$
(D) $LRTC(2) = \$16$
(E) None of the above statements is true.

14. In the following payoff matrix, the row player has two pure strategies: S1 and S2, and the column player has two pure strategies: T1 and T2. The first (second) element of a payoff vector is the payoff to the row (column) player.

	T1	T2
S1	2,3	0,4
S2	1,5	2,1

In a Nash equilibrium with mixed strategies, the row player will play S1 with probability p and the column player will play T1 with probability q. We have:

(A) $p = 4/5$
(B) $p = 3/4$
(C) $p = 2/3$
(D) $q = 2/3$
(E) $q = 3/4$

15. In a perfectly competitive market, there are 1,000 potential producers and each producer has the identical long-run cost function:

$$LRTC(q_i) = q_i^2 + q_i + 100, \text{ if } q_i > 0,$$

where q_i is the quantity produced by firm i, and $LRTC(0) = 0$. The market demand is:

$$q = 410 - 10p,$$

where q is the quantity and p is the price. In the long-run equilibrium, the market price will be

(A) 5
(B) 10
(C) 15
(D) 20
(E) None of the above

16. Continue with the previous problem; let n be the number of producers in the market and let q_i be the amount each producer supplies. In the long-run equilibrium,

(A) $q_i = 5$
(B) $q_i = 10$
(C) $n = 15$
(D) $n = 25$
(E) None of the above statements is true.

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17. In a perfectly competitive market, the market demand is $q = 100 - p$ and the market supply is $q = 3p$, where q is the quantity and p is the price. If the government imposes a unit tax of \$4 on the firm, so for each unit sold, a firm has to pay a tax of \$4. What is the equilibrium price after the tax is imposed?
(A) \$25
(B) \$26
(C) \$27
(D) \$28
(E) None of the above

18. Continue with the previous problem; the deadweight loss caused by the tax is:
(A) \$2
(B) \$4
(C) \$6
(D) \$8
(E) None of the above

19. A monopolist sells in two segregated markets and he could practice the third-degree price discrimination. The demand in market 1 is:

$$q_1 = 100 - p_1,$$

and the demand in market 2 is:

$$q_2 = 80 - 2p_2,$$

where q_i is the quantity and p_i is the price, $i = 1,2$. The total cost function of the monopolist is $TC(q) = q^2/6$, where $q = q_1 + q_2$. To maximize profit, what is the monopolist's pricing scheme?
(A) $p_1 = 30$
(B) $p_1 = 60$
(C) $p_2 = 20$
(D) $p_2 = 30$
(E) None of the above is true.

20. Continue with the previous problem; at the optimal,
(A) $q_1 > q_2$
(B) $q_1 < q_2$
(C) $q_1 + q_2 = 40$
(D) $q_1 + q_2 = 60$
(E) None of the above is true.

21. In a city, there are 200 identical people. Before the city builds a zoo, everyone plays video games in the weekend and the recreational value to a person is \$20 daily. Now a person could either play games, or visit the zoo for a day's pastime. The recreational value per person per day, V, depends on the number of visitors to the zoo that day, n: $V = 200 - n$. If the city wishes to sell one-day admission tickets at a price of p per person in order to maximize the sum of recreational value of 200 people, what is the price?
(A) $p = \$0$
(B) $p = \$40$
(C) $p = \$80$
(D) $p = \$120$
(E) None of the above is true.

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22. Continue with the previous problem; if the city wishes to maximize total revenue from the admission tickets per day, what is the price?
(A) $p = \$0$
(B) $p = \$40$
(C) $p = \$80$
(D) $p = \$120$
(E) None of the above is true.

23. A principal, who is risk-neutral, wishes to design a wage contract to maximize his expected profit. The principal's revenue is either \$100 or \$200 and the probability to have a revenue of \$100, p, is a function of his agent's effort, e. $p = 3/4$, if $e = 0$, and $p = 1/2$, if $e = 1$. The wage could be dependent on the principal's revenue. Let w_1 and w_2 be the wage paid to the agent when the revenue is \$100 and \$200, respectively. The agent, who is risk-averse, wishes to maximize his expected utility:

$$p(e)\sqrt{w_1} + \big(1 - p(e)\big)\sqrt{w_2} - e.$$

If the wage contract is not satisfactory, the agent will work for another job and in this case, the agent's expected utility will be 3. If the principal wishes to induce the agent to have $e = 0$, what is the optimal wage contract?
(A) $w_1 = 4, w_2 = 36$
(B) $w_1 = 36, w_2 = 4$
(C) $w_1 = 0, w_2 = 144$
(D) $w_1 = 16, w_2 = 0$
(E) None of the above is true.

24. Continue with the previous problem; if the principal wishes to induce the agent to have $e = 1$, what is the optimal wage contract?
(A) $w_1 = 4, w_2 = 36$
(B) $w_1 = 36, w_2 = 4$
(C) $w_1 = 0, w_2 = 64$
(D) $w_1 = 64, w_2 = 0$
(E) None of the above is true.

25. Continue with the previous two problems; in the principal's optimal contract, which effort level will be induced? How will the wage be arranged? And what is the principals' expected profit $E\pi$?
(A) $e = 0$
(B) $e = 1$
(C) $w_1 = w_2$
(D) $w_1 < w_2$
(E) $E\pi = 120$

試題隨卷繳回