- 請依題號順序於「選擇題作答區」內作答。

- 單選題，共25題，每題4分。

1. If an individual's utility function is given by $U(x, y) = \sqrt{x \cdot y}$ and $I = 100$, $p_x = 1$, $p_y = 4$, his or her preferred consumption bundle (x^*, y^*) will be:

    (a) $(20, 20)$.

    (b) $(50, 12.5)$.

    (c) $(40, 15)$.

    (d) $(60, 10)$.

    (e) $(80, 5)$.

2. An individual has a utility function for tennis rackets (x) and tennis balls (y) of the form $U(x, y) = \min(3x, y)$. His or her expenditure function is given by:

    (a) $E = \left(\frac{p_x}{3} + p_y\right) U$.

    (b) $E = \left(p_x + 3p_y\right) U$.

    (c) $E = \left(3p_x + p_y\right) U$.

    (d) $E = \left(p_x + \frac{p_y}{3}\right) U$.

    (e) $E = \left(\frac{p_x + p_y}{3}\right) U$.

3. Suppose that Romeo has the utility function $U = S_R^5 S_J^1$ and Juliet has the utility function $U = S_R^1 S_J^5$, where S_R is Romeo's spaghetti consumption and S_J is Juliet's. They have 48 units of spaghetti to divide between them.

    (a) Juliet would want to give Romeo some spaghetti if she had more than 38 units of spaghetti.

    (b) Romeo would want to give Juliet some spaghetti if he had more than 24 units of spaghetti.

    (c) Romeo and Juliet would never disagree about how to divide the spaghetti.

    (d) Romeo would want to give Juliet some spaghetti if he had more than 36 units of spaghetti.

    (e) Juliet would want to give Romeo some spaghetti if she had more than 40 units of spaghetti.

4. A small coffee company roasts coffee beans in its shop. The unroasted beans cost the company $2 per pound. The marginal cost of roasting coffee beans is $ $(150 - 10q + q^2)/100$ per pound when q pounds are roasted. The smell of roasting beans imposes costs on the company's neighbors. The total amount that neighbors would be willing to pay to have the shop stop roasting altogether is $0.05q^2$, where q is the number of pounds being roasted. The company sells its output in a competitive market at $4.50 per pound. What is the socially efficient amount of coffee for the company to roast?

    (a) 10 pounds.

    (b) 15 pounds.

    (c) the square root of 10 pounds.

    (d) 45 pounds.

    (e) none of the above.

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5. A firm hires two kinds of workers, alphas and betas. The population at large has equal number of alphas and betas. One can't tell a beta from an alpha by looking at her, but an alpha will produce $3,000 worth of output per month and a beta will produce $2,500 worth of output in a month. The firm decides to distinguish alphas from betas by having workers take an examination. A worker will be paid $3,000 if she gets at least 60 answers right and $2,500 otherwise. For each question that they get right on the exam, alphas have to spend 1/2 hour studying and betas have to spend 1 hour. For either type, an hour's studying is as bad as giving up $20 of income per month. This scheme leads to

   (a) a separating equilibrium where alphas score 60 and betas score 0.
   (b) a pooling equilibrium where alphas score 60 and betas score 0.
   (c) a pooling equilibrium where everybody scores 60.
   (d) a pooling equilibrium where everybody scores 0.
   (e) a separating equilibrium where everybody scores 60.

6. Suppose two individuals in an exchange economy have identical utility functions given by $U = x^{1/2}y^{1/2}$. Person A has an endowment of $x = 9$, $y = 8$, person B has one of $x = 16$, $y = 2$. The price ratio that will prevail in equilibrium is:

   (a) $p_x/p_y = 2.5$
   (b) $p_x/p_y = 1$
   (c) $p_x/p_y = 0.4$
   (d) $p_x/p_y = 0.125$
   (e) $p_x/p_y = 0.5$

7. In an isolated mountain village, the only crop is corn. Villagers plan for two time periods. In the first time period each villager will harvest 100 bushels. In the second time period, no corn will be harvested. There is no trade with the rest of the world and no stocks of corn remain from before the first period. Corn can be stored from one time period to the next, but rats eat 25% of what is stored. The villagers all have Cobb-Douglas utility functions $U(C_1, C_2) = C_1 C_2$ and can allocate their own corn between consumption and storage as they wish. If the introduction of cats to the village reduces the rats' predations to 10% of what is stored,

   (a) consumption in the first time period will not change.
   (b) villagers will consume 5% more corn in each time period.
   (c) consumption in the first time period will increase but by less than 5%.
   (d) consumption in the second time period will not change.
   (e) consumption in the first time period will decrease.

8. A group of 9 consumers are trying to decide whether to connect to a new communications network. Consumer 1 is of type 1, consumer 2 of type 2, consumer 3 of type 3, and so on. Each consumer's willingness to pay to belong to the network is proportional to the number of consumers who belong. The willingness to pay of a type n consumer is equal to $k \times n$, where k is the number of consumers who belong. What is the highest price at which 7 consumers could all connect to the network and either make a profit or at least break even?

   (a) $23
   (b) $19
   (c) $18
   (d) $26
   (e) $21

接次頁

9. Assume the supply curve for diapers is a typical, upward-sloping straight line, and the demand curve for diapers is a typical, downward-sloping straight line. Suppose the equilibrium quantity in the market for diapers is 1,000 per month when there is no tax. Then a tax of $0.50 per diaper is imposed. The effective price paid by buyers increases from $1.50 to $1.90 and the effective price received by sellers falls from $1.50 to $1.40. The government's tax revenue amounts to $475 per month. Which of the following statements is correct?

   (a) After the tax is imposed, the equilibrium quantity of diapers is 900 per month.

   (b) The demand for diapers is more elastic than the supply of diapers.

   (c) The deadweight loss of the tax is $12.50.

   (d) The tax causes a decrease in consumer surplus of $380.

   (e) none of the above.

10. Pat and Joe are playing a game. The rules of the game are simple. Pat is given $100. He can either give it to Joe or keep it for himself. If he keeps it for himself, $50 will be taken back and the remaining will be split between them. If he gives it to Joe, Joe can either divide it into two equal parts or keep it for himself. If he divides it into two equal parts, each of them will get $50. If he does not split the money, he will get the entire amount. Which of the following is likely to happen in this case?

   (a) Pat will give the money to Joe.

   (b) Joe will keep the money for himself.

   (c) A socially inefficient equilibrium will occur.

   (d) Multiple equilibria will occur.

   (e) none of the above.

11. Suppose the point of tangency that characterizes long-run equilibrium for a monopolistically competitive firm occurs at Q_1 units of output. This level of output, Q_1,

   (a) exceeds the level of output at which marginal revenue equals marginal cost.

   (b) exceeds the level of output at which marginal cost equals average total cost.

   (c) falls short of the level of output at which price equals marginal cost.

   (d) exceeds the firm's efficient scale of output.

   (e) none of the above.

12. In the short run, a market consists of 100 identical firms. The market price is $6, and the total cost to each firm of producing various levels of output is given in the table below. What will total quantity supplied be in the market?

Output	Total Cost
0	$1
1	$7
2	$12
3	$21
4	$32
5	$45

   (a) 100 units
   (b) 200 units
   (c) 300 units
   (d) 400 units
   (e) 500 units

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13. The table below shows the preferences of three neighbors regarding the number of security guards they need to guard their locality.

Voters	Most Preferred	In Between	Least Preferred
Joseph	2	6	4
Catherine	4	2	6
Bob	6	4	2

Which of the following is true?

(a) The society takes a unanimous decision to employ 6 security guards.

(b) The cumulative preference in this situation does not guarantee transitivity.

(c) The voters prefer 2 guards over 4 guards, when asked to choose between employing either 2 or 4 guards.

(d) The voters prefer 4 guards over 6 guards, when asked to choose between employing either 4 or 6 guards.

(e) none of the above.

14. If Taiwan's central bank wants to keep the NT dollar undervalued against the US dollar, what can it do?

- (I) buys the NT dollar and sells the US dollar
- (II) buys the US dollar and sells the NT dollar
- (III) raises the interest rate
- (IV) lowers the interest rate

(a) (I) and (III)

(b) (I) and (IV)

(c) (II) and (III)

(d) (II) and (IV)

(e) none of the above

15. If a \$15 billion reduction in taxation produces a change of \$20 billion in output, the value of the government taxation multiplier is _____.

(a) 0.25

(b) 1/3

(c) 5

(d) 35

(e) none of the above

16. Multipliers amplify an initial shock. When do multiplier effects take place?

(a) During recessions only

(b) During expansions only

(c) During both recessions and expansions

(d) During both recessions and expansions, but only if the economy is not at full employment

(e) During both recessions and expansions, but only if the inflation rate is positive

接次頁

17. Suppose that the money supply increases by 20 percent. What does the quantity theory of money tell us must happen to real GDP?

    (a) It must increase by more than 20 percent

    (b) It must increase by less than 20 percent

    (c) It must increase by exactly 20 percent

    (d) It won't change at all

    (e) none of the above

18. If the central bank did not follow the Taylor principle, an increase in inflation would lead to a decrease in _____.

    (a) the nominal interest

    (b) the real interest rate

    (c) aggregate output

    (d) all of the above

    (e) none of the above

19. The classical dichotomy states that

    (a) money is superneutral

    (b) goods markets are separated from labor markets

    (c) demand is separate from supply

    (d) real markets determine nominal outcomes, not the reverse

    (e) none of the above

20. Theoretically, an increase in the real wage will definitely

    (a) increases leisure

    (b) decreases leisure

    (c) either (a) or (b)

    (d) has no effect on leisure

    (e) none of the above

21. Which of the following statements are the implications of the Ricardian equivalence theorem?

    - (I) government debt policy must be handled correctly for the economy to prosper.
    - (II) the amounts of government spending are not neutral.
    - (III) an increase in government spending has no effect on the economy, as long as there is an equal change in taxes.
    - (IV) the timing of taxes collected by the government is neutral.

    (a) (II) and (III)

    (b) (I) and (III)

    (c) (II) and (IV)

    (d) (III) and (IV)

    (e) none of the above

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[Questions 22-25]

Consider a consumer that lives for two periods (time t and $t + 1$). In the first period she receives an endowment of 4 units and in the second period an endowment of 10 units. At the beginning of the first period the consumer does not own any assets (i.e., $b_t = 0$). The interest rate at which the consumer can borrow or save is r. The budget constraints are

$$c_t + b_{t+1} = y_t, \quad c_{t+1} = y_{t+1} + (1 + r)b_{t+1}$$

Assume that the preferences of the consumer are given by

$$U(c_t, c_{t+1}) = \log c_t + \beta \log c_{t+1}, \quad \beta \in [0, 1].$$

22. Under what condition will the consumer be a borrower in the first period?

   (a) $\frac{\beta}{1+r} > 2.5$
   (b) $\frac{1+r}{\beta} > 2.5$
   (c) $(1 + r) > 2.5$
   (d) $\beta(1 + r) > 2.5$
   (e) none of the above

23. A Keynesian consumption function is given by

$$c_t = 0.9 y_t$$

Which of the following statements are true?

   - (I) The marginal propensity to consume (MPC) in this model is always smaller than the MPC in the Keynesian model.
   - (II) In the Keynesian consumption function, a consumer always save a fixed fraction of her current income.
   - (III) The consumption function in this model is consistent with the Keynesian consumption function.

   (a) (I) only
   (b) (II) only
   (c) (I) and (II)
   (d) (I) and (II) and (III)
   (e) none of the above

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24. Suppose that the consumer faces a liquidity constraint, which means that she can save but is unable to borrow in the first-period. Which of the following statements are true?

   - (I) The optimal second-period consumption will be 10 units.
   - (II) There will be a welfare loss.
   - (III) There will be a kink in the budget constraint line.

   (a) (I) only
   (b) (II) only
   (c) (I) and (II)
   (d) (I) and (II) and (III)
   (e) none of the above

25. Continue to assume that the consumer is liquidity constrained in the first-period. Furthermore, assume $\beta = 1$ and $r = 0$. Suppose that the income in the first period increases by a small number ε (while the income in the second period remains unchanged). What is the marginal propensity to consume for the consumer faced by borrowing constraint.

   (a) 0.5
   (b) 1
   (c) 0
   (d) 0.9
   (e) none of the above

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