第一部分: 單選題

單選題共 12 題，每題 5 分，共 60 分。單選題每題只有一個正確答案，不需要提供計算過程。

1. Which of the following is true when the government imposes a price ceiling on a monopolist?

   (A) Marginal revenue becomes horizontal.

   (B) Marginal revenue is linear.

   (C) Marginal revenue is kinked—horizontal and then downward sloping.

   (D) Marginal revenue is kinked—downward sloping and then horizontal.

   (E) None of above.

2. Suppose that Jade is one of N competitors in an oligopoly market which sells a homogenous product. The demand function that Jade and her competitors face is given by:

$$P = a - (Q),$$

   where $Q = \sum_{i=1}^{N} q_i$ and q_i represents the quantity produced by the i^{th} firm. Jade has the following marginal cost function:

$$MC = c$$

   Her competitors face the same marginal cost function. Assume that Jade's competitors are identical.

   (A) In the Nash Equilibrium, each firm will sell $q = \frac{(a-c)}{(N+1)}$

   (B) In the Nash Equilibrium, each firm will sell $q = \frac{(a-c)}{(N-1)}$

   (C) In the Nash Equilibrium, each firm will sell $q = \frac{2\,(a-c)}{(N)}$

   (D) In the Nash Equilibrium, each firm will sell $q = \frac{(a-c)}{(N)}$

   (E) None of the above.

3. Continue from above. Suppose that now Jade only has one other competitor and holds the first mover advantage. Everything else remains the same. Determine the Nash Equilibrium in this Stackelberg game. Find the quantity Jade and her competitor will each produce. What can you say about the quantity that Jade sells now?

   (A) The quantity that Jade will sell is $q = \frac{(a-c)}{2}$

   (B) The quantity that Jade will sell is $q = \frac{(a-c)}{3}$

   (C) The quantity that Jade will sell is 10 if a=12 and c=3

   (D) The quantity that Jade will sell is 10 if a=21 and c=3

   (E) None of the above.

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4. Zinc Communications developed a new type of cellular telephone that has a three-dimensional (3-D) screen. The company holds a patent on this technology, so they are the only seller of the 3-D phone when it is introduced. Over time, other companies introduce phones that are similar but not identical (i.e., they do not violate the patent held by Zinc). What happens to the demand for 3-D phones facing Zinc and to the profit-maximizing price for the 3-D phone as these similar products enter the market?

(A) Demand becomes less elastic, price increases
(B) Demand becomes less elastic, price declines
(C) Demand becomes more elastic, price increases
(D) Demand becomes more elastic, price declines
(E) None of the above.

5. Suppose that Claire is in a competitive industry with a large number of firms. Claire has the following cost function:

$$C(y) = \frac{y^2}{2} + 8$$

Denote the price that Claire obtains for her good y is p. The industry demand curve is given by:

$$y = 500 - 2p$$

Assume that all firms face the same cost function.
What is the maximum number of firms this industry can support?

(A) 117
(B) 120
(C) 123
(D) 126
(E) 129

6. The mini-ultimatum game is a two-player game in which a proposer is given a choice between making one of two pre-set offers which the responder can then accept or reject after observing the proposed offer. If the responder accepts, the proposed choice is carried out. On the other hand, if the responder rejects, both get 0.

In one study using human subjects, there were four different games. In all games, the proposer had as one option an amount that would typically be seen by a human responder as unfair, namely 80% for the proposer and 20% for the responder (8/2 offer; the proposer received the amount to the left of the slash and the responder received the amount to the right). In the 8/2 versus 5/5 game, the proposer was faced with the choice of 8/2 versus 5/5 (unfair versus fair). The other games were 8/2 versus 2/8 (unfair versus hyperfair), 8/2 versus 8/2 (no choice), and 8/2 versus 10/0 (unfair versus hyperunfair). Human responders rejected the 8/2 offer 44.4% when the alternative offer was fair (5/5 game), 26.7% when the alternative offer was hyperfair (2/8 game), 18% when there was no alternative (8/2 game), and 8.9% when the alternative offer was for the proposer to be even more selfish (10/0 game). Let us assume when a responder is indifferent between accepting and rejecting, (s)he breaks the tie by accepting; when a proposer is indifferent between two different offers, (s)he breaks the tie by proposing the offer that the amount of the proposer is larger in the offer.

Mr. S is completely self-interested, i.e., he wants to maximize how much he gets after any offer. If being proposed the 8/2 offer, in

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the four games (in the order of 8/2 versus 5/5, 8/2 versus 2/8, 8/2 versus 8/2 and 8/2 versus 10/0), he will correspondingly

(A) reject, reject, accept, accept
(B) reject, accept, accept, accept
(C) accept, accept, accept, accept
(D) reject, reject, reject, reject
(E) none of the above.

7. Continue from above. Mr. P is also completely self-interested. He plays (as a proposer) the games with Mr. S (as a responder). When proposing to Mr. S, in the four games (in the order of 8/2 versus 5/5, 8/2 versus 2/8, 8/2 versus 8/2 and 8/2 versus 10/0), Mr. P will correspondingly propose

(A) 5/5, 2/8, 8/2, 8/2
(B) 5/5, 8/2, 8/2, 8/2
(C) 5/5, 2/8, 8/2, 10/0
(D) 8/2, 8/2, 8/2, 10/0
(E) none of the above.

8. Continue from above. Ms. F cares not only about her own payoff but is also concerned about fairness. Her utility is how much she gets minus the absolute value of the difference between how much the proposer gets and how much the responder gets. For instance, as a responder, when offered 10/0, her utility of accepting is 0-|10-0|=-10 and her utility of rejecting is 0-|0-0|=0. She wants to maximize her utility after any offer. If being proposed the 8/2 offer, in the four games (in the order of 8/2 versus 5/5, 8/2 versus 2/8, 8/2 versus 8/2 and 8/2 versus 10/0), she will correspondingly

(A) reject, reject, accept, accept
(B) reject, accept, accept, accept
(C) accept, accept, accept, accept
(D) reject, reject, reject, reject
(E) none of the above.

9. Continue from above. Mr. P is also completely self-interested. He plays (as a proposer) the games with Ms. F (as a responder). When proposing to Ms. F, in the four games (in the order of 8/2 versus 5/5, 8/2 versus 2/8, 8/2 versus 8/2 and 8/2 versus 10/0), Mr. P will correspondingly propose

(A) 5/5, 2/8, 8/2, 8/2
(B) 5/5, 8/2, 8/2, 8/2
(C) 5/5, 2/8, 8/2, 10/0
(D) 8/2, 8/2, 8/2, 10/0
(E) none of the above.

10. Continue from above. If a fixed proportion of responders behaves exactly like Mr. S and the remaining responders behave exactly like Ms. F,

(A) we could explain the differential rejection rate of 8/2 outcomes across the four games

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(B) we could not explain the differential rejection rate of 8/2 outcomes across four the games

(C) we are not given enough information to answer whether we could explain the differential rejection rate of 8/2 outcomes across the four games

(D) a proposer like Mr. P will propose 8/2 in the 8/2 versus 10/0 game

(E) none of the above.

11. In the market for used cars there are good cars and bad cars. The good cars comprise a fraction G of all the cars that can be put up for sale, where $0 < G < 1$. Buyers cannot distinguish a good car from a bad car, whereas each seller knows the type of car she is selling. All buyers are risk neutral. The valuations of good and bad cars by buyers and sellers are given (in $) in the following table.

	Good	Bad
Buyers	50	20
Sellers	35	10

Assuming that all cars are put up for sale. Let P be the price a buyer would be willing to pay. Which of the following statement is true?

(A) P=30G+20

(B) P=30G+10

(C) The minimum value of G for which both types of cars will be offered for sale is 0.7

(D) The minimum value of G for which both types of cars will be offered for sale is 0.6

(E) When G is 0.4, both types of cars will be offered for sale.

12. Continue from above. There is an agency which can assess each car and certify it as "good" or "bad". If certified "good", the seller can negotiate a price of $45 with the buyer. What is the maximum that a seller of a good car will be willing to pay to get his car assessed?

(A) When G=0.8, buyers are willing to pay up to $40 for an unassessed car.

(B) When G=0.8, the maximum that a seller of a good car will be willing to pay to get his car assessed is $1.

(C) When G = 0.7, buyers are willing to pay up to $44 for an unassessed car.

(D) When G = 0.8, no seller will have get his car assessed.

(E) When G = 0.6, the maximum that a seller of a good car will be willing to pay to get his car assessed is $1.

第二部分: 複選題 (每題 5 分，共 40 分)

每題 5 分。沒有作答者，0 分計算，每答錯一個選項扣兩分，扣完為止。比如說，如果正確的答案是 a b c, 但是你選了 a c d. 那麼錯誤的有漏選的 b 與多選的 d，所以這題的得分會是 5-2-2=1。每題分數獨立計算，不影響其他題的分數。

13. Consider a pure exchange economy with two consumers 1 and 2, and two goods x and y. Consumer 1's initial endowment is $\omega 1 = (0, 1)$; that is, 0 units of good x and 1 unit of good y. Consumer 2's initial endowment is $\omega 2 = (1, 0)$. Therefore, the initial allocation is $(\omega 1, \omega 2)$. Consumers have the identical utility function

$$u(x,y) = x^{\alpha}y^{\beta}.$$

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Let (*Px, Py*) be a pair of prices under the Walrasian equilibrium; i.e., the competitive equilibrium of the economy.

(A) The initial allocation (ω1,ω2) is a Pareto efficient allocation.

(B) The allocation ((0, 0), (1, 1)) is a Pareto efficient allocation.

(C) $\frac{Px}{Py}=\frac{\alpha}{\beta}$

(D) $\frac{Px}{Py}=\frac{\beta}{\alpha}$

(E) $\frac{Px}{Py}=\frac{\alpha}{\alpha+\beta}$

14. Continue from above. According to the Second Welfare Theorem, some of the following allocations can be achieved via competitive markets as a Walrasian equilibrium with redistribution of initial endowments. Please find those allocations.

(A) ((0.4, 0.4), (0.6, 0.6))

(B) ((0.6, 0.4), (0.4, 0.6))

(C) ((0.5, 0.5), (0.5, 0.5))

(D) $(\frac{\alpha}{\alpha+\beta},\frac{\beta}{\alpha+\beta}),(\frac{\beta}{\alpha+\beta},\frac{\alpha}{\alpha+\beta})$

(E) $(\frac{\beta}{\alpha+\beta},\frac{\alpha}{\alpha+\beta}),(\frac{\alpha}{\alpha+\beta},\frac{\beta}{\alpha+\beta})$

15. There are three consumers of a public good. The demands for the consumers are as follows: Consumer 1: $P1 = 60 - Q$. Consumer 2: $P2 = 100 - Q$. Consumer 3: $P3 = 140 - Q$,

where Q measures the number of units of the good and P is the price in dollars.

(A) When the marginal cost of the public good is $180, the economically efficient level of production of the good is 40.
(B) When the marginal cost of the public good is $60, the economically efficient level of production of the good is 80.
(C) When the marginal cost of the public good is $350, the economically efficient level of production of the good is 0.
(D) When the marginal cost of the public good is $320, the economically efficient level of production of the good is 20.
(E) When the marginal cost of the public good is $200, the economically efficient level of production of the good is 10.

16. Pete is a little kid. He is easily attracted by the biggest reward. When given several lotteries, he chooses the one which contains the largest prize. Knowing this, an economist will conclude

(A) Pete is an expected utility maximizer
(B) Pete is not an expected utility maximizer
(C) Pete is risk averse
(D) Pete is risk loving
(E) Pete could be risk neutral.

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17. When facing no risks, Pete is still attracted by the biggest amount. When given consumption bundles with chocolate and fruit, he chooses the bundle which contains the largest amount of any good. For instance, when given (2 chocolates and 3 fruits) or (4 chocolates and 1 fruit), since Pete is attracted by the largest amount (4 chocolates in this case), he goes for (4 chocolates and 1 fruit).

(A) Pete's preference can be represented by some utility function. In fact, there are many such utility functions.
(B) Pete's preference cannot be represented by any utility function.
(C) If the price of chocolate is higher than that of fruit, no matter how much allowance Pete has to spend on chocolate and fruit, he will consume some chocolates and some fruits.
(D) If the price of chocolate is 1, but the price of fruit goes from 4 to 3, no matter how much allowance Pete can spend on chocolate and fruit, the substitution effect is 0.
(E) If the price of chocolate is 1, but the price of fruit goes from 4 to 3, no matter how much allowance Pete can spend on chocolate and fruit, the income effect is 0.

18. Continue from above. Pete's mom, Melody, does not like Pete to eat too many chocolates. Pete is not strategic: he is honest to mom and always chooses according to his own preference. Whenever he chooses to have 4 chocolates or less, Melody is fine with it and let Pete go ahead to consume what he chooses. As long as Pete chooses to have 5 chocolates or more, Melody overrides and jumps in to choose on behalf of Pete. When doing that, Melody spends all Pete's allowance on fruit and does not buy any chocolate for Pete. In that case Pete consumes what Melody chooses for him.

(A) According Pete's own preference, neither chocolate nor fruit is an inferior good.
(B) If Pete has 5 dollars to spend on chocolate and fruit and the price of chocolate is 2 and that of fruit is 3, Pete will eat 2.5 chocolates.
(C) If Pete has 5 dollars to spend on chocolate and fruit and the price of chocolate is 2 and that of fruit is 3, Pete will eat no chocolate.
(D) If Pete has 5 dollars to spend on chocolate and fruit and the price of chocolate is 1 and that of fruit is 3, Pete will eat 5 chocolates.
(E) If Pete has 5 dollars to spend on chocolate and fruit and the price of chocolate is 1 and that of fruit is 3, Pete will eat no chocolate.

19. Continue from above. An economist observing Pete's consumption will conclude

(A) Chocolate cannot be a Giffen good to Pete.
(B) Chocolate can be a Giffen good to Pete.
(C) Fruit cannot be a Giffen good to Pete.
(D) Fruit can be a Giffen good to Pete.
(E) Chocolate is a Giffen good to Pete.

20. Small children like Pete are often described as impulsive. In other words, they cannot patiently wait. In a famous experiment, small children were offered a choice between one marshmallow always available immediately or two marshmallows if they waited for 15 minutes. The always available marshmallow was in front of children throughout. If they did not eat that marshmallow for 15 minutes, the experimenter will add another marshmallow and children could eat two marshmallows then. If they ate the marshmallow before 15 minutes ended, the experiment ended. Observing whether small children waited minute-by-minute, some children ate the immediate one marshmallow right away. Some held on to wait for the entire 15 minutes

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and happily ate two marshmallows at the end. The remaining kids struggled, but failed to hold on till the end of 15 minutes. They ate one marshmallow in-between. It was claimed that those who could wait for the entire 15 minutes had better performance after they grew up.

An economic model assumes people discount future consumption by a factor which is smaller than 1. So any future consumption at t minutes later values only a fraction d(t)<1 if the future consumption is moved to now. Moreover, the fraction is assumed to be decreasing in t. In other words, the more delayed the future consumption is, the heavier people devalue future consumption. Naturally, d(0)=1. In other words, delaying 0 minute does not invite any discounting.

(A) The economic model could explain why some kids ate one marshmallow right way. To them, waiting for 15 minutes to get an extra marshmallow is not worth it. So they ate one marshmallow right away.

(B) The economic model could explain why some kids waited for the entire 15 minutes. To them, waiting for 15 minutes to get an extra marshmallow is worth it. So they waited at the start. As time goes, since the time they had to wait becomes shorter (from 15 minutes to 14, 13, 12, and so on), it becomes more and more worthwhile to wait for the extra marshmallow, so they waited.

(C) The economic model cannot explain why some kids waited for the entire 15 minutes. To them, waiting for 15 minutes to get an extra marshmallow is worth it. So they waited at the start. But as time goes, it becomes less and less worthwhile to wait for the extra marshmallow, so they are predicted to stop in-between.

(D) The economic model could explain why some kids waited but failed to hold on through the entire 15 minutes. To them, waiting for 15 minutes to get an extra marshmallow is worth it at the start. But as time goes, they find waiting for the extra marshmallow less and less worth it. So they gave in in-between.

(E) The economic model cannot explain why some kids waited but failed to hold on through the entire 15 minutes. To them, waiting for 15 minutes to get an extra marshmallow is worth it at the start. But as time goes, they should find waiting for the extra marshmallow more and more worthwhile. So they should not have given in in-between.

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