**NANYANG TECHNOLOGICAL UNIVERSITY**

**SEMESTER 1 EXAMINATION 2023-2024 (PRACTICE)**

**HE1001 MICROECONOMICS I**

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| **Seat Number :** |  |  |  |  |  |  |  |  |  |
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| **Matriculation Number :** |  |  |  |  |  |  |  |  |  |

**INSTRUCTIONS**

1. This paper contains **THREE (3)** questions and comprises **FIVE (5)** pages.
2. Answer all **THREE (3)** questions.
3. This is a **CLOSED-BOOK** examination.
4. There is **NO** answer book. Write down your answers in the space specified in this paper.
5. The number of marks allocated is shown at the end of each question.

**THIS PAPER MUST NOT BE REMOVED FROM THE EXAM HALL**

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**GRADES (FOR EXAMINER’S USE ONLY)**

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| --- | --- |
|  | **Marks** |
| Question 1 | /40 |
| Question 2 | /30 |
| Question 3 | /30 |
| **Total** |  |

**Question 1**

**Multiple-choice questions with justification. Please select the most appropriate answer and briefly explain why.**

1. Which of following is a key assumption of a perfectly competitive market?

(10 marks)

A) Firms are price-takers.

B) Commodities have many sellers.

C) It is difficult for new sellers to enter the market.

D) Each seller has a large share of the market.

E) Buyers have bargaining power.

F) Both A and B

G) Both A and C

H) Both B and D

I) A, B, and C

Answer: \_\_\_\_\_\_\_

Justification:

1. Which of the following behaviours are inconsistent with standard economic models?

(10 marks)

1. John shops at Benjamin Barker. He chooses to purchase only 1 item when the promotion is "Buy 2 and get 25% off" but he switches to purchase 2 items when the promotion is revised to "Buy 1 and get 1 50% off."
2. In the recent popular Caifan song, Annette and Ben cannot decide what to order at a caifan stall. (Source: https://www.youtube.com/watch?v=kvtu8byJQhE)
3. When playing the ultimatum game, the proposer offers 10% of the endowment to the recipient. The recipient decides to reject the offer because he finds it unfair.
4. All of the behaviours described above are inconsistent with standard economic models.

Answer: \_\_\_\_\_\_\_

Justification:

1. Consider the following game that represents the payoffs from different advertising campaigns (low, medium, and high spending) for two political candidates that are running for a particular office. The values in the payoff matrix represent the share of the popular vote earned by each candidate. These two candidates move simultaneously. Which of the following statements is correct?

(10 marks)

**Table

Description automatically generated**

1. Neither candidate has a dominant strategy, but the Nash equilibrium occurs where both candidates use medium advertising campaigns.
2. Candidate A's dominant strategy is high, Candidate B's dominant strategy is high, and this is the Nash equilibrium.
3. Neither candidate has a dominant strategy, but the Nash equilibrium occurs where both candidates use high advertising campaigns.

D) There is no Nash equilibrium for this game.

Answer: \_\_\_\_\_\_\_

Justification:

1. Consider total cost and total revenue given in the following table. Please calculate profit for each quantity. How much should the firm produce to maximize profit?



(10 marks)

1. 2
2. 3
3. 4
4. 5
5. 6
6. 7
7. 3 or 4
8. 4 or 5
9. 5 or 6
10. 6 or 7

Answer: \_\_\_\_\_\_\_

Justification:

**Question 2**

Consider two firms facing the demand curve P = 50 - 5Q, where Q = Q1 + Q2. The firms’ cost functions are C1(Q1) = 20 + 10 Q1 and C2(Q2) = 10 + 12 Q2.

1. Please solve for the Cournot equilibrium. (15 marks)
2. Please explain whether the Cournot equilibrium in part (a) is a Nash equilibrium. (15 marks)

(TOTAL: 30 marks)

**Question 3**

Elizabeth Airlines (EA) flies only one route: Chicago-Honolulu. The demand for each flight is Q=500-P. EA's cost of running each flight is $30,000 plus $100 per passenger.

1. What is the profit-maximizing price that EA will charge? How many people will be on each flight? What is EA's profit for each flight? (15 marks)
2. EA finds out that two different types of people fly to Honolulu. Type A consists of business people with a demand of QA = 260 - 0.4P. Type B consists of students whose total demand is QB = 240 - 0.6P. Because the students are easy to spot, EA decides to charge them different prices. What price does EA charge the students? What price does it charge other customers? How many of each type are on each flight? (15 marks)

(TOTAL: 30 marks)