

國立成功大學

111學年度碩士班招生考試試題

編 號：336

系 所：政治學系政治經濟學碩士班

科 目：經濟學

日 期：0219

節 次：第 3 節

備 註：不可使用計算機

※ 考生請注意：本試題不可使用計算機。請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

1. Many social interactions involve principal-agent problems. For each of the following examples, explain who the principal is, who the agent is, and what aspects of their interaction are of interest to each and are not covered by a complete contract.

- a. A company hires a security guard to protect its offices. (10%)
- b. A government wants to commission research to find out as much as possible about the virus of Covid-19. (10%)

2. There are two firms (firm 1 and firm 2) producing identical bags in a market. They simultaneously and independently set prices and then are forced to produce exactly the number of bags ( $q_1$  and  $q_2$  for the two firms respectively) demanded by customers at these prices ( $p_1$  and  $p_2$ ). Suppose that consumers purchase bags from the firm that charges the lower price. Let the industry demand be  $Q=100-\min\{p_1, p_2\}$ , where  $Q=q_1+q_2$ . If the firms set equal prices, we assume that the demand is split evenly. We further assume the cost of production is 10.

- a. What are the firms' payoff functions? (10%)
- b. What are the equilibrium prices set by the firms? (10%)
- c. What are the equilibrium profits of the firms? (10%)

3. Taiwan has the following domestic supply and demand for yachts:

$$P_d=50-3Q_d, P_s=2+Q_s$$

The world price for a yacht is 5 million dollars.

- a. Initially, what is the number of yachts that Taiwan imports/exports? How many yachts are made domestically in Taiwan? (10%)
- b. What is the consumer surplus? What is the domestic producer surplus? (10%)
- c. The government aims to protect domestic production of yachts and decides to impose a tariff of 3 million dollars on foreign yachts. How will the consumer and producer surplus become? How much revenue does the government raise by imposing this tariff? (10%)

4. 名詞解釋：(20%，各5%)

- (1) Free-rider problem
- (2) Risk aversion
- (3) Pigouvian tax
- (4) Public goods