

本試卷總共有 3 個題組，共 25 個題目，請於答案卷中依順序清楚標明回答的題項

[題組 1] (34 分)

Q1-Q11 (34% in total), please fill out the blank fields and provide your explanations when instructed on the answer book.

Hilt & Soul Company **【H&S】** has the Production Function as follows.

$$Q_t = 10 E_{t-1}^{0.25} K_t^{0.25} L_t^{0.25} S_t^{0.25}, \text{ where}$$

$E_{t-1}$  = units of ESG capital deployed by H&S at the beginning of year  $t-1$ ,

$K_t$  = units of real capital (including fixed assets and inventories) deployed by H&S at the beginning of year  $t$ ,

$L_t$  = number of work hours of unskilled labor deployed by H&S at the beginning of year  $t$ ,

$S_t$  = number of work hours of skilled labor deployed by H&S at the beginning of year  $t$ .

SVP Gingalain, who is a senior board member and an ESG expert, stated that global ESG **【environmental, social and governance】** assets may reach \$53 trillion by 2025. Demand for sustainable investments is exceeding supply. And there is an early mover advantage in this aspect.

The Company announced this morning that the existing chief executive officer **【CEO】** will step down in two weeks. Surprisingly, the Company's nomination committee decided that H&S hires the succeeding CEO from outside rather than promoting from within the management team. A nomination committee is a group of board members who are responsible for identifying candidates for positions on a board. Only two names appear on the final list of candidates for the position of CEO submitted by H&S nomination committee. These candidates are Mr. Launcelot du Lac and Mr. Tristan du Lac.

Doctor Pellinore, who is a nomination committee member, said, "ESG investment needs to increase indeed. These two gentlemen are equally competent except that Dr. Launcelot du Lac is nearing the retirement age. The Age Discrimination in Employment Act **【ADEA】** forbids age discrimination against people who are age 40 or older. Yet my concern is that CEOs nearing retirement may attempt to boost short-term firm performance at the expense of the long-term growth of the Company. Accordingly, I believe that Dr. Launcelot du Lac is a better candidate for the CEO position and meet our growth goal."

Dr. Dagonet, who is also a nomination committee member, said, "CEOs nearing retirement are likely to care more about what type of legacy they will leave behind. Thus I believe that Dr. Launcelot du Lac is the better candidate."

The marginal product of real capital **【MPK】** is the incremental increase in total production that results from one unit increase in real capital while keeping all other inputs constant. The marginal product of ESG **【MPE】** is the incremental increase in total production that results from one unit increase in ESG investment while keeping all other inputs constant.

Due to an unexpected sharp increase in fluctuations in market demand, companies in this industry all plan to significantly increase the number of safety stocks of inventories starting from the beginning of year 2025. SVP Ector, who is a senior board member, stated that solely because the upcoming increase in safety stocks, the Company's subsequent year MPK will become 3.2. SVP Kay, who is also a senior board member, stated that solely because the upcoming increase in safety stocks, the Company's subsequent year MPK will become 2.6.

The levels of H&S production factors are shown in the following table.

<u>Year</u>	<u>Units of ESG capital</u>	<u>Units of real capital</u>	<u>Number of work hours of unskilled labor</u>	<u>Number of work hours of skilled labor</u>

見背面

2022	9	80	30	20
2023	10	90	35	25
2024	11	100	40	30

H&S is an all-equity **【unleveraged】** firm. The equity beta **【 $\beta$ 】** for H&S is 1.5. The discount rate for real capital = The discount rate for ESG capital.

- Q1. Growth rate of total output from 2023 to 2024 = \_\_\_\_\_. (3%)
- Q2. H&S's marginal product of real capital in year 2024 = \_\_\_\_\_. Show your calculation. (3%)
- Q3. H&S's marginal product of ESG capital in year 2023 = \_\_\_\_\_. Show your calculation. (3%)
- Q4. If H&S always maximizes its profits and if the minimum wage in Neverland, where H&S locates itself, increases, then would  $L_{2025} / K_{2025}$  increase or decrease? \_\_\_\_\_ **【If you show your discussion, then there is no need to place your calculation in this cell.】** (3%)
- Q5. If H&S always maximizes its profits and if the minimum wage in Neverland, where H&S locates itself, increases by 10%, then the Company's production function would become  $Q_t = A E_{t-1}^\alpha K_t^\beta L_t^\phi S_t^\tau$ .  $A = \_\_\_\_ , \phi = \_\_\_\_ , \tau = \_\_\_\_$ . **【If you show your discussion, then there is no need to place your calculation in this cell.】** (3%)
- Q6. If (1) required return of the market index portfolio = 11% and (2) risk-free rate = 5%, then the discount rate for real capital of H&S = \_\_\_\_\_ (3%)
- Q7. For H & S, the rate of real capital depreciation  $\delta = 11\%$ . Then the Company's aggregate cost of real capital = \_\_\_\_\_% (3%)
- Q8. Sir Mine said, "For H & S, unskilled labor and skilled labor are perfect substitutes." Was he telling the truth? \_\_\_\_\_ Why or why not? \_\_\_\_\_ (3%)
- Q9. In year 2023, were there increasing returns to scale, constant returns to scale, or decreasing returns to scales for H&S? **【If you show your discussion, then there is no need to place your calculation in this cell.】** (3%)
- Q10. One of the two SVPs who issued predictions regarding the subsequent year MPK is a true expert in Economics. Which one of these two SVPs is the true expert in Economics? \_\_\_\_\_ Why? (3%)
- Q11. One of the only two nomination committee members who hold doctoral degree, Dr. Pellinore and Dr. Dagonet, is a true expert in Economics. Which one of these two doctors is the true expert in Economics? \_\_\_\_\_ Why? (4%)

[題組 2] (33 分)

Q12-Q16 (33% in total) are essay questions, please provide your calculations and answers on the answer book.

(一) (20%)

新冠疫情、去風險化以及中、美進行可管控的戰略脫鉤，都讓全球生產鏈的重組勢在必行；更直接衝擊到台灣企業的跨國布局，準此：

- Q12. 發生在主要國家之間的「競合關係」，總圍繞高科技的產能擴充、市場去化、技術取得與研發創新等面向；這類的策略思考與其立論，與新古典學派(Neoclassical Economics)的基本假設，尤其新成長理論(New Growth Theory)的推導，有何在政策立場與產業扶持的差異？
- Q13. 針對台灣相關企業的對外投資，主要國家在晚近所提出產業政策，尤其半導體產業，各國的招商重點有那些？其投資環境的優劣勢又有哪些差異？而半導體產業在台灣立足的競爭優勢，能否持續呢？
- Q14. 根據總合供需模型以及您在上述兩小題的回答整理，請具體論證、分析和推估：全球經貿網絡、區域成長可能性與總體物價的走勢，將如何受到主要國家調整其共同立場與產業政策之後，產生在總體面的短期衝擊與長期影響。

(二) (13%)

發生在世貿組織 (WTO) 的強權角力與仍醞釀中的機制調整，連帶會影響到「自貿協議」與相關區域組織，包跨架構設計與實際運作上。就在財經媒體所經常出現的字眼：WTO、BREXIT、CPTPP、APEC 與 USMCA，

- Q15. 就上述專屬名稱的縮寫，寫出其中、英文全稱；請說明其主要意涵和晚近發生的重大更張，尤其在發生變動前、後的關鍵歷程。
- Q16. 曾代表台灣出席歷屆 APEC 領袖會議，有哪幾位大員或是先進呢？而就中的哪一位代表，是參與次數最多的？你是如何做成此研判呢？

見背面

## [題組 3] (33 分)

Q17-Q20 (3% each question, 12% in total) are multiple-choice questions, please choose the best possible answer out of the choices from the list, and provide your answers on the answer book.

The majority of successful senior managers do not closely follow the classical rational model of first clarifying goals, assessing the problem, formulating options, estimating the likelihoods of success, making a decision, and only then taking action to implement the decision. Rather, in their day-by-day tactical maneuvers, these senior executives rely on what is vaguely termed "intuition" to manage a network of interrelated problems that require them to deal with ambiguity, inconsistency, novelty, and surprise; and to integrate action into the process of thinking.

Generations of writers on management have recognized that some practicing managers rely heavily on intuition. In general, however, such writers display a poor grasp of what intuition is. Some see it as the opposite of rationality; others view it as an excuse for capriciousness.

Isenberg's recent research on the cognitive processes of senior managers reveals that managers' intuition is neither of these. Rather, senior managers use intuition in at least five distinct ways. First, they intuitively sense when a problem exists. Second, managers rely on intuition to perform well-learned behavior patterns rapidly. This intuition is not arbitrary or irrational, but is based on years of painstaking practice and hands-on experience that build skills. A third function of intuition is to synthesize isolated bits of data and practice into an integrated picture, often in an "Aha!" experience. Fourth, some managers use intuition as a check on the results of more rational analysis. Most senior executives are familiar with the formal decision analysis models and tools, and those who use such systematic methods for reaching decisions are occasionally leery of solutions suggested by these methods which run counter to their sense of the correct course of action. Finally, managers can use intuition to bypass in-depth analysis and move rapidly to engender a plausible solution. Used in this way, intuition is an almost instantaneous cognitive process in which a manager recognizes familiar patterns. One of the implications of the intuitive style of executive management is that "thinking" is inseparable from acting. Since managers often "know" what is right before they can analyze and explain it, they frequently act first and explain later. Analysis is inextricably tied to action in thinking/acting cycles, in which managers develop thoughts about their companies and organizations not by analyzing a problematic situation and then acting, but by acting and analyzing in close concert.

Given the great uncertainty of many of the management issues that they face, senior managers often instigate a course of action simply to learn more about an issue. They then use the results of the action to develop a more complete understanding of the issue. One implication of thinking/acting cycles is that action is often part of defining the problem, not just of implementing the solution.

Q17. According to the passage, senior managers use intuition in all of the following ways EXCEPT to

- (A) speed up of the creation of a solution to a problem
- (B) identify a problem
- (C) bring together disparate facts
- (D) stipulate clear goals
- (E) evaluate possible solutions to a problem

Q18. According to the passage, the classical model of decision analysis includes all of the following EXCEPT

- (A) evaluation of a problem
- (B) creation of possible solutions to a problem
- (C) establishment of clear goals to be reached by the decision
- (D) action undertaken in order to discover more information about a problem
- (E) comparison of the probable effects of different solutions to a problem

Q19. It can be inferred from the passage that which of the following would most probably be one major difference in behavior between Manager X, who uses intuition to reach decisions, and Manager Y, who uses only formal decision analysis?

- (A) Manager X analyzes first and then acts; Manager Y does not.
- (B) Manager X checks possible solutions to a problem by systematic analysis; Manager Y does not.
- (C) Manager X takes action in order to arrive at the solution to a problem; Manager Y does not.
- (D) Manager Y draws on years of hands-on experience in creating a solution to a problem; Manager X does not.
- (E) Manager Y depends on day-to-day tactical maneuvering; Manager X does not.

Q20. It can be inferred from the passage that “thinking/acting cycles” in managerial practice would be likely to result in which of the following?

- I. A manager analyzes a network of problems and then acts on the basis of that analysis.
- II. A manager gathers data by acting and observing the effects of action.
- III. A manager takes action without being able to articulate reasons for that particular action.

- (A) I only
- (B) II only
- (C) I and II only
- (D) II and III only
- (E) I, II, and III

Q21-Q23 (13% in total) are essay questions, please provide your calculations and answers on the answer book

Consider two countries,  $A$  and  $B$ , each with a monopolist that owns the only lithium mine in the country, and it produces lithium. Let firm 1 be the one located in country  $A$ , and firm 2 the one in country  $B$ . Let  $q_i^j$ ,  $i \in \{1, 2\}$  and  $j \in \{A, B\}$  denote the quantity that firm  $i$  sells in country  $j$ . Consequently, let  $q_i = q_i^A + q_i^B$  be the total quantity that firm  $i \in \{1, 2\}$ , and let  $q^j = q_1^j + q_2^j$  be the total quantity sold in country  $j \in \{A, B\}$ . The demand for lithium in countries  $A$  and  $B$  is given respectively by,

$$p^j = 90 - q^j, j \in \{A, B\},$$

and the costs of production for each firm is given by,

$$c_i(q_i) = 10q_i, i \in \{1, 2\}.$$

Q21. Assume that the countries do not have a trade agreement and, in fact, imports in both countries are prohibited. This implies that  $q_2^A = q_1^B = 0$  is set as a political constraint. What quantities  $q_1^A$  and  $q_2^B$  will both firms produce? (4%)

Now assume that the two countries sign a free-trade agreement that allow foreign firms to sell in their countries without any tariffs. There are, however, shipping costs. If firm  $i$  sells quantity  $q_i^j$  in the foreign country (i.e., firm 1 selling in country  $B$  or firm 2 selling in country  $A$ ), then shipping costs are equal to  $10q_i^j$ . Assume further that each firm chooses a pair of quantities  $q_i^A$ ,  $q_i^B$  simultaneously,  $i \in \{1, 2\}$ , so that a profile of actions consists of four quantity choices.

Q22. Model this as a normal form of game and find a Nash equilibrium of the game you described. Is the equilibrium unique? (4%)

Now assume that before the game you described in Q22. is played, the research department of firm 1 discovered that shipping lithium with the current ships causes the release of pollutants. If the firm would disclose this report to the WTO, then the WTO would prohibit the use of current ships. It follows that a new shipping technology would be offered that would increase shipping costs to  $40q_i^j$  (instead of  $10q_i^j$  mentioned above).

見背面

Q23. Would firm 1 be willing to release the information to the WTO? Please justify your answer with an equilibrium analysis. (5%)

Q24-Q25 (8% in total) are essay questions, please provide your calculations and answers on the answer book

Each of two sellers has one unit of an unusual commodity available to sell. Seller A posts a price of \$40 for its item. Seller B posts a price of \$60 for its item. There are exactly two potential buyers for this commodity. Each buyer would be willing to pay \$100 to get one of these items and both buyers are aware that there are two buyers and each is willing to pay \$100 for the item. Without knowing what the other buyer has done, the two buyers simultaneously decide which of the two sellers to approach. If two buyers approach the same seller, the seller tosses a fair coin to decide which of them to sell to. The other has to go home without making a purchase. We assume that a disappointed buyer is not able to approach the other seller. A buyer's payoff if he obtains an item for price  $p$  is  $100 - p$ . Buyers seek to maximize their expected payoffs.

Q24. Show the strategic form of the game played between the two buyers. And find all of the pure and mixed strategy Nash equilibrium profiles for this game. (4%)

Q25. Suppose that Seller B's price is \$50 and that Seller A's price is  $p_A$ . For what values of  $p_A$  is there a pure strategy Nash equilibrium for the game between the two buyers? For what values of  $p_A$  is the only Nash equilibrium for this game a mixed strategy equilibrium? (4%)

試題隨卷繳回