

- 三. In a design of a series of new products shown in Figure 1, assume that you are the major designer who is responsible for this design project, discuss the following questions:

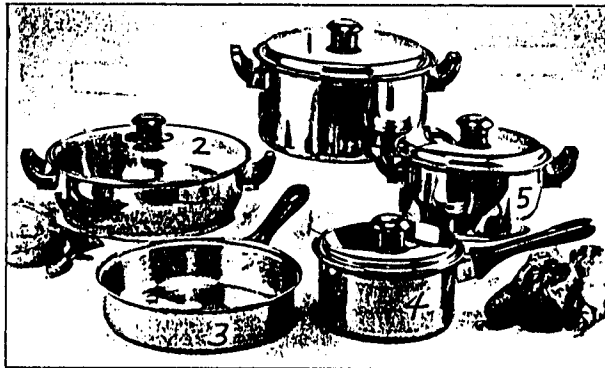


Figure 1. Five New Designs of Pots and Pans

- (10 %) 1. Specify your design goals, design objectives, and design criteria.
- (10 %) 2. In order to determine your design criteria for this design project, explain how you deal with the analysis of product needs.
- (10 %) 3. Develop product structures for these pots and pans.
- (10 %) 4. Use morphological analysis to generate design alternatives that are based on product structures you developed in Question 3.
- (10 %) 5. Develop a design process to determine feasible design alternatives and the optimum feasible design alternative for the generated design alternatives that you did in Question 4.

Notes:

1. In answering each question, you should keep your statements, interpretation, or discussion be directly towarded to the above design project. Do'nt use any general concepts for your answers; otherwise, you will not gain any credit.
2. You may use tables, figures, drawings, or any representation technique as parts of your answers.
3. In question 5, you should consider what kinds of theories, rules, concepts, approaches, or problem solving techniques can be efficiently and appropriately applied in the steps of your design process. Do'nt just mention a general purpose design process. This design process should also be based on this design project.

一. 在建五形態分析 (Morphological Approach) 表 (如下圖), 參數的設定要

參數 (Parameters)	變異形式 (Variations)
A	A ₁ A ₂ A ₃ A ₄
B	B ₁ B ₂
C	C ₁ C ₂ C ₃

注意那些原則? 就列舉六個。 (15%)

二. 請自行舉一個实例——設計主題 (Subject), 並用系統定義矩陣 (System Definition Matrix, 由七個系統元件及五個向度所構成之矩陣, 如下圖) 對設計主題予以界定或描述, 請將答案, 依 A₁, A₂, …… E₆, E₇ 之順序寫在各系統紙上。(註: 您所舉之实例——設計主題, 必須非常清楚的描述在左, 然後再寫 A₁, …… E₇ 的答案) (35%)

系統元件 (System Elements)	DIMENSIONS (向度)				
	Physical	Rate	Control	State	Interface
• Function	A ₁	B ₁	C ₁	D ₁	E ₁
• Inputs	A ₂	B ₂	C ₂	D ₂	E ₂
• Outputs	A ₃	B ₃	C ₃	D ₃	E ₃
• Sequence	A ₄	B ₄	C ₄	D ₄	E ₄
• Environment	A ₅	B ₅	C ₅	D ₅	E ₅
• Physical Catalysts	A ₆	B ₆	C ₆	D ₆	E ₆
• Human Agents	A ₇	B ₇	C ₇	D ₇	E ₇