



HIGHER SCHOOL CERTIFICATE EXAMINATION

1996

**DESIGN AND
TECHNOLOGY**

3 UNIT (ADDITIONAL)

(20 Marks)

*Time allowed—One hour
(Plus 5 minutes' reading time)*

DIRECTIONS TO CANDIDATES

- Attempt TWO questions.
- The question in Section I is COMPULSORY.
- Attempt ONE question from Section II.
- Answer each question in a *separate* Writing Booklet.
- You may ask for extra Writing Booklets if you need them.

SECTION I

The question in this Section is **COMPULSORY**.
Answer the question in a *separate* Writing Booklet.

QUESTION 1. (12 marks)

Technological innovation has resulted in employment and lifestyle opportunities that are different from those that have existed previously.

Look at the images in Figures 1, 2, and 3 of technological systems and their components.

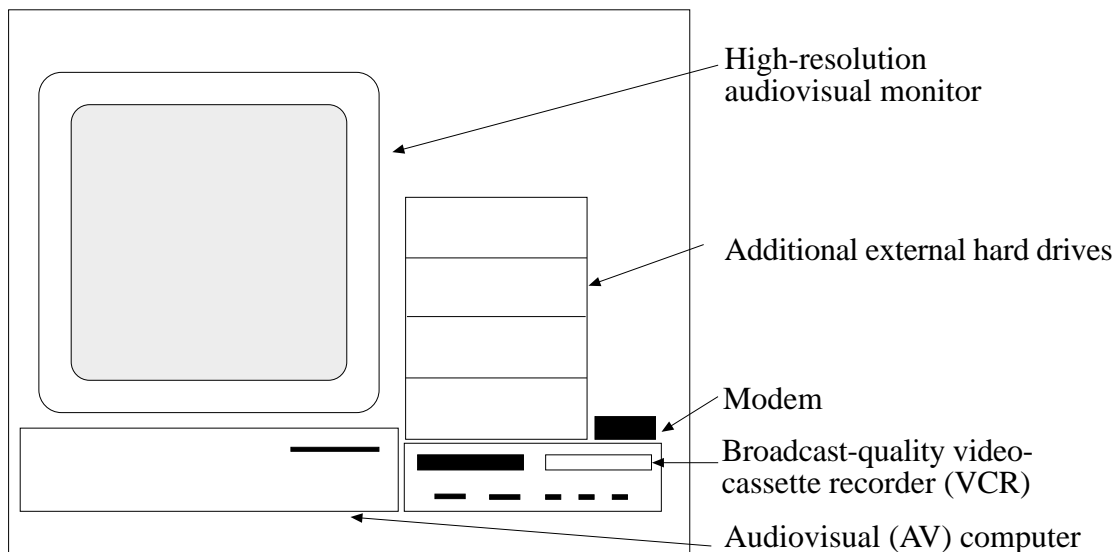


FIGURE 1. A WORKSTATION FOR A ONE-PERSON
DESKTOP VIDEO-PRODUCTION BUSINESS,
OPERATING FROM HOME

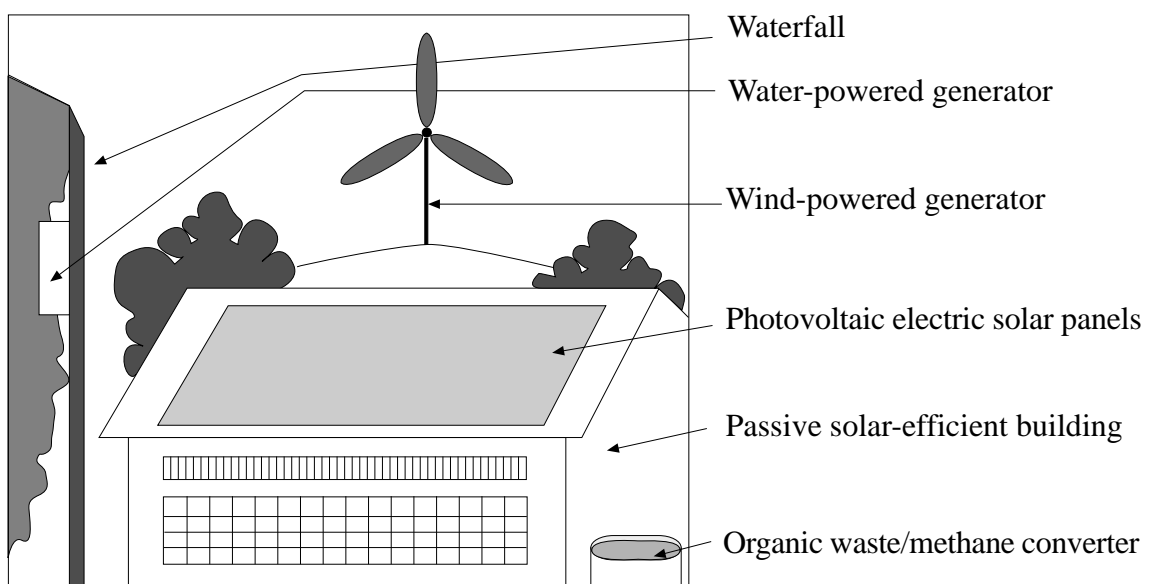


FIGURE 2. MANUFACTURING COMPANY USING
ONLY ALTERNATIVE ENERGY SOURCES

QUESTION 1. (Continued)

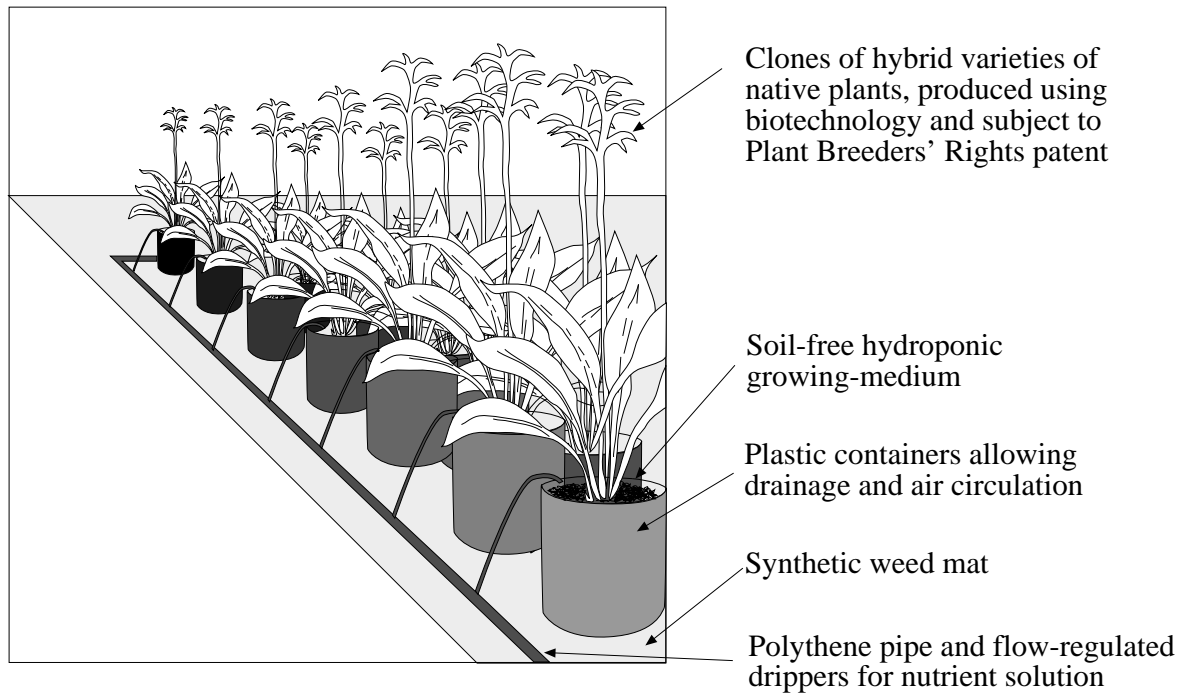


FIGURE 3. FAMILY- OPERATED INTENSIVE FARM
PRODUCING CUT FLOWERS FOR EXPORT

- (a) Analyse the relationship between developments in technology, people's attitudes, and changing work practices in society. Use examples to support your answer. Examples may be taken from Figures 1, 2, and/or 3, or from other technological innovations you have studied.
- (b) Choose ONE of the Figures 1, 2, or 3 and:
- (i) explain why the technological system you have chosen is innovative;
 - (ii) comment on the likely motivations behind the development of the innovative technologies;
 - (iii) discuss the role of entrepreneurial activity in the enterprise associated with the technological system.
- (c) *Economic, cultural, political, and legal factors influence the rate of adoption of innovations.*

Critically discuss this statement. Use examples from the innovations represented in Figures 1, 2, or 3, or from other innovations you have studied.

SECTION II

Attempt ONE question.

Each question is worth 8 marks.

Answer the question in a *separate* Writing Booklet.

EITHER

QUESTION 2

- (a) Government agencies and private enterprise are increasing the use of security systems and surveillance technologies. These technologies enable the collection of data and the production of audio and video recordings of people's activities.
- (i) State TWO examples of the use of security systems and surveillance technologies.
 - (ii) Suggest possible advantages and disadvantages of the use of security systems and surveillance technologies in society.
 - (iii) Propose ways in which the disadvantages of the use of security systems and surveillance technologies to society or individuals can be minimised or controlled. Evaluate your proposal.
- (b) With developments in technology, it is possible that all personal data will be stored on one card, similar to the current Medicare card.

Critically discuss the ethical and commercial implications of the universal use of such a system.

OR

QUESTION 3

For ONE successful innovation in Australian design and technological activity that you have studied, answer the following.

- (a) Name and briefly describe the innovation.
- (b) Describe a design process that relates directly to the innovation.
- (c) Discuss why the innovation was able to bring about change.
- (d) Identify the marketing strategies and explain how they contributed to the success of the innovation.
- (e) Evaluate the impact of the innovation on *either* society *or* the environment.

OR

QUESTION 4

- (a) Explain the meaning of the term 'entrepreneurial activity'.
- (b) Discuss why the success of innovative design is dependent upon entrepreneurial activity.
- (c) A company is exploring the possibility of designing and producing a sun-protection product from recycled materials. The company's research has indicated that most existing sun-protection products are made from non-recycled materials.
 - (i) Suggest a possible product, and justify the choice of recycled materials to be used in this product.
 - (ii) Propose a strategy that the company might use to create a market for this product.
 - (iii) Critically discuss the legal and ethical considerations that may influence the development and marketing of the sun-protection product.

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