



HIGHER SCHOOL CERTIFICATE EXAMINATION

1998

**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)

In Australia, current social and economic indicators point to significant changes in the nature of work. Led by technology and innovation and facilitated by workplace reforms, it is likely that people will take on several new jobs during their working life. Complete reskilling on a number of occasions may be required. Many of these jobs have yet to be thought of, designed or implemented. Work may become much more integral to life, leisure and lifestyles.

Using examples you have studied, critically analyse the impact of technological change and innovation on the Australian workplace. In your answer, examine the possible positive and negative impacts on individuals, society as a whole and the environment.

The stimulus material on the next page may also be used when answering this question.

Copyright not available



And all of this in an environment of radical change. Australia Post's new status in the corporate field has involved huge amounts of change which is Linda Nicholls' bread and butter. Not only is change normal, she says, it's invigorating: 'If I look back in my corporate life, there were many times I was involved in organisations that had to undergo quite dramatic change—whether it was restructuring or downsizing or merger and acquisition, or any of the dramas of corporate life. And what stood out in my mind were managers who were very concerned about the morale of their staff, who were feeling besieged on all sides, who tried to comfort their troops by saying, 'Look, the sooner we get through this, life's going to get back to normal.' Not true! Change is normal. Continuous improvement is normal. It's the way we do things out here. It's not that we do a little burst and then sit down for a rest. No.'

Another way in which the Internet is altering the nature of work is by making the world a smaller place and enabling people in different countries to work, in effect, alongside each other. . . . —sending software back and forth on the Internet, and video-conferencing. 'In the last two years, we have reduced our flying a lot—at least two-thirds, I would say,' according to the company's Joe Latty. 'The year before last we were putting stuff on hard disks and flying it over to America.' Latty foresees an increasing number of companies working internationally like this.

Source: Australia Post

SECTION II

Attempt ONE question.

Each question is worth 8 marks.

Answer the question in a SEPARATE Writing Booklet.

EITHER

QUESTION 2

The world appears to be shrinking due to innovation in transport and communications.



Consider the images above and answer the following questions.

- Identify a mode(s) of transport that you are familiar with and discuss innovations that have resulted in improvements.
- Discuss the cultural needs and wants that could have influenced the developments identified in part (a).
- Explain the technological developments that were necessary for the innovations identified in part (a) to be possible.
- Critically analyse the impact of changes in transport on society.

OR

QUESTION 3

The development of the personal computer started with hobbyists designing their own systems and selling them to friends and other hobbyists. This entrepreneurial activity was further expanded by offering special deals to schools, and selling the computers in kit form to keep the price down.

You are the designer of a new personal computer that is faster, cheaper and more compact than any other available.

- (a) Propose how you would introduce this product to the market, identifying the key aspects that should be addressed.
- (b) Your competitors are eager to copy your product because it is so good. What steps could you take to stay ahead of your competitors?
- (c) You have the opportunity to hire the chief designer from your main competitor. Discuss the ethical issues that may be involved if you do employ this designer.
- (d) After your computer has been released to the marketplace you discover that there is a fault in the design which may cause minor injuries to a small number of users. It is estimated that the cost of recall, redesign and repair is much more than the expected total compensation claims. Discuss the issues involved in deciding what action should be taken.

OR

QUESTION 4

Sport and leisure are areas in which design and technology has been a driving force. Better equipment, analysis of technique and management of human physiology all have implications for performance and enjoyment.

- (a) Describe one significant innovation in sport or leisure and discuss the factors that influenced its success.
- (b) What role did government and/or private organisations play in the development, implementation and acceptance of this innovation?
- (c) Analyse the ethical issues of the innovation that impact on the individual, society and the environment.
- (d) Suggest and explain how the innovation identified in part (a) could be adapted for another purpose.

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