BOARD OF STUDIES
NEW SOUTH WALES

2011 Design and Technology HSC Examination 'Sample Answers'

When examination committees develop questions for the examination, they may write 'sample answers' or, in the case of some questions, 'answers could include'. The committees do this to ensure that the questions will effectively assess students' knowledge and skills.

This material is also provided to the Supervisor of Marking, to give some guidance about the nature and scope of the responses the committee expected students would produce. How sample answers are used at marking centres varies. Sample answers may be used extensively and even modified at the marking centre OR they may be considered only briefly at the beginning of marking. In a few cases, the sample answers may not be used at all at marking.

The Board publishes this information to assist in understanding how the marking guidelines were implemented.

The 'sample answers' or similar advice contained in this document are not intended to be exemplary or even complete answers or responses. As they are part of the examination committee's 'working document', they may contain typographical errors, omissions, or only some of the possible correct answers.

Section II

Question 11

Answers could include:

- ergonomics – relationship of human body to environment, eg height, size
- materials – selection of safe and appropriate, eg PVC, leather
- construction – joints, fastenings, etc are appropriate for shape and design and suit end usage
- load capacity – chair construction and materials support appropriate end-use weight.

Question 12

Answers could include:

Factors	Contributes to success
Timing	• suitable timeframe for release of new product, ie release of a phone with camera • time in society when there is a need or trend for the item
Utilisation of emerging technologies	• integration of emerging technologies into new products to provides individuals with increased/ enhanced features, eg digital/3D television
Cost	• value for money • disposable income to invest in new innovation
Choice of materials	• environmentally friendly materials • performance • availability of choice • energy efficient
Features	• quality of sound/picture/range • user friendly • capabilities
Aesthetical appeal	• interior design features, eg colours, shape, mounting
Needs and wants of individual	• satisfy personal needs and wants • status

Question 13 (a)

Answers could include:

- to ensure consumers will need to replace
- to increase sales/profits
- provides opportunity for released sales of newer versions
- to incorporate emerging technologies in each new version of the product.

Question 13 (b)

Answers could include:

- permits consumers to gain access to the most recent/innovative/emerging technologies within limited time spans, eg release of newer versions of iPhone allowed consumers to access new features, including camera flash
- newer versions of products provide consumers with more variety/choice in the marketplace, therefore increased opportunity to acquire a product that meets their needs
- allows new materials to be used/incorporated that have greater benefits to society, eg in regards to health, safety and recyclability
- benefits the individual and environment
- increased waste products as both end product and manufacturing processes release excess waste to be disposed of in landfill/rubbish
- as consumers purchase newer versions, purely to gain more features, the older version (still working) becomes an excess item in the home or landfill in the environment.
- innovation of new materials and processes can be incorporated or replace outdated production processes
- new materials and processes may use less energy in production, have greater recycling capabilities or be more biodegradable.

Section III

Question 14 (a)

Answers could include:

Activities undertaken to determine need	How/Where/Why
Investigate and evaluate existing products on market	• research current and/or existing products to determine if and why they are successful, which will inform the designer to help with direction in meeting the market needs
Consumer/target audience survey	• research/survey the market (target) to determine their needs
Research design features and possibilities	• analyse the data from the previous research to determine a direction, then explore and develop ideas for a redesign of the existing product
Investigate emerging technologies	• develop based on results previously determined, investigate the integration of innovative/emerging technology

Question 14 (b)

Answers could include a range of functional and aesthetic factors, such as:

- more user friendly
- better quality, eg sound, picture
- enhanced feature capability
- improved reliability
- maintain/increase market share for producers
- meet societal expectations with respect to keeping up to date with latest technology
- improved aesthetic aspects
- societal expectation with regard to product/brand status
- compatibility with new technologies across a range of products
- availability of new materials and/or technologies to 'change' the nature of a product
- societal expectations with regard to the environment may change people's perspective of certain products, hence the need to meet social acceptance
- in order to access funding/benefits from government incentives/initiatives, eg power supply → solar power.