

2017 HSC Design and Technology Marking Guidelines

Section I

Multiple-choice Answer Key

Question	Answer
1	A
2	B
3	C
4	D
5	D
6	B
7	C
8	C
9	A
10	A

Section II

Question 11

Criteria	Marks
• Provides reasons why some innovative products are more successful	2
• Identifies a factor of success	1

Sample answer:

Some innovative products are more successful than others as a result of issues related to the timing of the release of a product, the ability of the designer to address current trends and the identifying of solutions to real or genuine needs. Other factors such as improved capabilities, ease of use and improved quality will also impact on the success of an innovative design idea.

Question 12

Criteria	Marks
• Provides characteristics and features of how technology supports the communication between members of a design team	3
• Sketches in general terms how technology supports the communication between members of a design team	2
• Identifies or provides general information of how technology supports communication when designing	1

Sample answer:

Improved capacity and capabilities of technology supports communication between members of a design team by allowing greater volume and diversity of information to be shared quickly and conveniently from any location. Access to more information in a variety of formats in turn, speeds up the decision making process within a design team resulting in the development of design solutions at a much greater rate with the additional advantage of having a greater number of skilled people involved in the design process.

Question 13

Criteria	Marks
• Discusses how the use of sustainable materials and practices stimulates the development of innovative technologies	4
• Describes how the use of sustainable materials and practices stimulates the development of innovative technologies	3
• Outlines how the use of sustainable materials and/or practices stimulates the development of innovative technologies	2
• Identifies how a sustainable material and/or practice stimulates the development of innovative technologies	1

Sample answer:

The use of sustainable materials stimulates the development of innovative technologies by extending the current barriers or limits to current design options or solutions. The social acceptance of the need to use sustainable materials further encourages designers to explore additional options or alternatives and produce other innovative design solutions that use these technologies. The cyclic nature of the design process allows for designers to explore other possible sources and uses of sustainable materials again producing further development of existing designed solutions. The concept of experimenting, testing and exploring the possibilities of using sustainable materials only further enhances the development of design ideas that incorporate the use of innovative technologies.

Question 14

Criteria	Marks
<ul style="list-style-type: none"> • Provides why and/or how designers strive to improve upon previous designs • Shows a clear relationship between the improved and previous design/s 	6
<ul style="list-style-type: none"> • Discusses why designers strive to improve upon previous designs • Shows a relationship between the improved and previous design/s 	5
<ul style="list-style-type: none"> • Describes why designers strive to improve upon previous designs • Shows a link between the improved and previous design/s 	4
<ul style="list-style-type: none"> • Outlines why designers strive to improve upon previous designs 	3
<ul style="list-style-type: none"> • Shows some understanding of why designers strive to continue to improve upon their designs 	2
<ul style="list-style-type: none"> • Identifies an aspect of design improvement 	1

Sample answer:

Although current or old products remain functional, easy to use and in most cases are still cost effective to use, many designers continue to strive to improve on their previous designs.

Consumer readiness to take up, accept and utilise new, more innovative solutions may be a result of newer items becoming easier to use, faster, more user friendly, capable of providing a better service, more durable, better warranty cover, or may even be seen as perceived status items and more serviceable.

In addition to these factors, many designers could also be seen to be taking advantage of the willingness of consumers to spend their disposable income on new devices that are marketed to address the needs and wants of society.

A willingness of consumers to follow current trends or fashions may even provide motivation for the development of newer products by designers. Likewise, many designers will also attempt to expand their market share and/or profits and improve on market image or branding of a product by making minor improvements in current working solutions.

Designers will also attempt to take advantage of any environmental advancements, innovative processes, techniques and materials that could aid in the marketing of their new products in addressing consumer needs and wants.

Section III

Question 15

Criteria	Marks
<ul style="list-style-type: none"> Shows a comprehensive understanding of the implications of legal and ethical issues in the development of innovative products Draws out and relates the implications Communicates using relevant examples 	13–15
<ul style="list-style-type: none"> Explains the effects of legal and ethical issues in the development of innovative products Communicates using relevant examples 	10–12
<ul style="list-style-type: none"> Describes the legal and ethical issues in the development of innovative products May include a relevant example 	7–9
<ul style="list-style-type: none"> Outlines a legal and/or ethical issue in the development of innovative products 	4–6
<ul style="list-style-type: none"> Shows a limited understanding of legal and/or ethical issues 	1–3

Answers could include:

Designers have a legal and ethical responsibility in the development of design solutions. The images provided give some great examples of where this may come into play.

Ethical:

- Responsibility for safety:
 - While in use/storage/charging
 - During production
- Environmentally questionable manufacturing processes
- Product lifecycle implications
- Responsibility for manufacturing standards both locally and overseas
- Invasion of privacy
- Affordability costs
- Provision of operational infrastructure
- Impact on the environment
- Loss/creation of jobs.

Legal:

- Intellectual property
- Safety
- Consequence of injury while in use
- Consequence of damage/injury to third party or property
- Third party insurance requirements
- Licensing obligations
- Manufacturing standards
- Invasion of privacy

- Danger in public spaces, including ground or air
- Responsibilities for ownership and operation
- Interference with emergency services
- Policing of operation/use
- Product warranty
- Implications of emergence and ownership of technologies and the partnership between relevant parties
- Management of operational infrastructure.

2017 HSC Design and Technology Mapping Grid

Section I

Question	Marks	Content	Syllabus outcomes
1	1	Design factors	H1.1
2	1	Work of designers	H1.2
3	1	Intellectual property	H2.2
4	1	Design factors	H1.1, H2.2
5	1	Research methods	H5.2
6	1	Design practices	H1.2, H3.2
7	1	Communication	H5.2
8	1	Design factors	H1.1, H6.2
9	1	Life cycle analysis	H1.1, H6.2
10	1	Entrepreneurial activity	H3.1

Section II

Question	Marks	Content	Syllabus outcomes
11	2	Design factors and success of innovation	H1.1, H2.1, H3.1
12	3	Communication	H5.2
13	4	Design practice	H1.2, H2.1
14	6	Trends in designing and producing	H2.1, H3.1, H6.2

Section III

Question	Marks	Content	Syllabus outcomes
15	15	Legal, ethical and technological factors and their impact on the success of innovation and emerging technologies	H2.1, H2.2, H3.1, H6.2