



**BOARD OF STUDIES**  
NEW SOUTH WALES

## **2012 HSC Information Processes and Technology Marking Guidelines**

### **Section I**

#### **Multiple-choice Answer Key**

<b>Question</b>	<b>Answer</b>
1	A
2	A
3	D
4	C
5	A
6	C
7	B
8	D
9	B
10	B
11	B
12	B
13	C
14	D
15	B
16	B
17	A
18	A
19	C
20	A

## Section II

### Question 21 (a)

Criteria	Marks
• Identifies appropriate field name with corresponding data type	2
• Demonstrates some understanding of fields	1

### Question 21 (b)

Criteria	Marks
• Identifies a range of appropriate technologies that demonstrate understanding of technology needed to access the online bookshop	3
• Identifies technologies that demonstrate understanding of online environments	2
• Identifies a feature of a technology	1

### Question 21 (c)

Criteria	Marks
• Describes features that demonstrate an understanding of help systems	2
• Identifies a feature that helps users with online systems	1

### Question 21 (d)

Criteria	Marks
• Sketches a database view and provides justification of data demonstrating understanding of the context and database views	4
• Sketches a database view and/or provides justification of data demonstrating understanding of database views	3
• Attempts to sketch a database view or provides justification of data demonstrating limited understanding of database	2
• Provides a feature of a database	1

**Question 22 (a)**

<b>Criteria</b>	<b>Marks</b>
• Sketches a clearly labelled diagram demonstrating an understanding of the context	2
• Attempts a diagram that shows limited understanding of data communication	1

**Question 22 (b)**

<b>Criteria</b>	<b>Marks</b>
• Demonstrates clear understanding by identifying a suitable development approach AND provides a thorough justification	3
• Provides identification of a development approach AND/OR justification of development	2
• Identifies a feature of development approaches	1

**Question 22 (c)**

<b>Criteria</b>	<b>Marks</b>
• Demonstrates an understanding of change in nature of work in context	2
• Identifies factor(s) of nature of work	1

**Question 22 (d)**

<b>Criteria</b>	<b>Marks</b>
• Provides description indicating understanding of data packets and analogue to digital data transmission in context	3
• Provides description indicating some understanding of data packets or analogue to digital data transmission	2
• Identifies a component of data packets	1

**Question 23 (a)**

<b>Criteria</b>	<b>Marks</b>
• Provides a description of TWO problems with a solution for each, indicating understanding of the problem and database	3
• Identifies a problem or proposes solutions indicating understanding of databases	2
• Identifies a feature or problem in a database	1

**Question 23 (b)**

<b>Criteria</b>	<b>Marks</b>
• Provides THREE substantially correct tables demonstrating an understanding of normalisation	4
• Provides tables demonstrating an understanding of normalisation	3
• Provides tables demonstrating some understanding of database	2
• Identifies features of tables	1

**Question 23 (c)**

<b>Criteria</b>	<b>Marks</b>
• Provides recommendation and justification for an order indicating understanding of the problem	3
• Provides recommendation and/or justification indicating some understanding of the problem	2
• Identifies a feature of an appropriate system	1

**Question 24 (a)**

<b>Criteria</b>	<b>Marks</b>
• Identifies participants and demonstrates understanding of their roles in context	2
• Identifies feature(s) of roles	1

**Question 24 (b)**

<b>Criteria</b>	<b>Marks</b>
• Provides an interface design demonstrating an understanding of user collaboration	2
• Attempts to provide a user interface	1

**Question 24 (c)**

<b>Criteria</b>	<b>Marks</b>
• Provides discussion demonstrating clear understanding of installation, support and maintenance considering a range of positive and negative issues in context	5
• Provides discussion demonstrating an understanding of installation and support/maintenance considering both positive and negative issues in context	4
• Provides description demonstrating an understanding of installation and support/maintenance	3
• Identifies issues demonstrating a limited understanding of installation and maintenance	2
• Identifies a feature of installation/maintenance	1

### Section III

#### Question 25 (a) (i)

Criteria	Marks
<ul style="list-style-type: none"><li>Provides definition of an online transaction processing system indicating some understanding of transaction processing</li></ul>	1

#### Question 25 (a) (ii)

Criteria	Marks
<ul style="list-style-type: none"><li>Provides description indicating understanding of the importance of data backup in context</li></ul>	2
<ul style="list-style-type: none"><li>Identifies an issue related to data backup</li></ul>	1

#### Question 25 (a) (iii)

Criteria	Marks
<ul style="list-style-type: none"><li>Provides explanation demonstrating an understanding of the reasons for batch processing</li></ul>	3
<ul style="list-style-type: none"><li>Provides description demonstrating an understanding of batch processing</li></ul>	2
<ul style="list-style-type: none"><li>Identifies a feature of batch processing</li></ul>	1

#### Question 25 (b) (i)

Criteria	Marks
<ul style="list-style-type: none"><li>Provides description of alternative procedures indicating understanding of scenario and ERP systems</li></ul>	2
<ul style="list-style-type: none"><li>Identifies a feature of alternative procedures</li></ul>	1

#### Question 25 (b) (ii)

Criteria	Marks
<ul style="list-style-type: none"><li>Provides explanation indicating an understanding of data mining and the scenario</li></ul>	3
<ul style="list-style-type: none"><li>Provides description indicating understanding of data mining</li></ul>	2
<ul style="list-style-type: none"><li>Identifies a feature of data storage</li></ul>	1

**Question 25 (b) (iii)**

<b>Criteria</b>	<b>Marks</b>
• Provides a comparison indicating clear understanding of ERP and the scenario	4
• Provides comparison indicating understanding of ERP	3
• Provides a comparison indicating limited understanding of ERP	2
• Identifies a feature of the scenario or ERP	1

**Question 25 (b) (iv)**

<b>Criteria</b>	<b>Marks</b>
• Provides discussion of alternative ERP application demonstrating understanding of the use of an ERP and the processes of organising and storing	5
• Provides description of alternative ERP application demonstrating understanding of ERP and the processes of organising and/or storing	4
• Identifies an application demonstrating understanding of the use of an ERP	3
• Identifies features demonstrating a limited understanding of the use of an ERP	2
• Identifies a feature of an ERP	1

**Question 26 (a) (i)**

Criteria	Marks
<ul style="list-style-type: none"><li>Describes how what-if models assist decision making indicating some understanding of decision making</li></ul>	1

**Question 26 (a) (ii)**

Criteria	Marks
<ul style="list-style-type: none"><li>Provides description indicating understanding of the use of macros in spreadsheets</li></ul>	2
<ul style="list-style-type: none"><li>Identifies a use of macros in a spreadsheet or provides an example</li></ul>	1

**Question 26 (a) (iii)**

Criteria	Marks
<ul style="list-style-type: none"><li>Provides discussion demonstrating an understanding of implications arising from automated decision making</li></ul>	3
<ul style="list-style-type: none"><li>Provides description demonstrating some understanding of implications arising from automated decision making</li></ul>	2
<ul style="list-style-type: none"><li>Identifies a feature of decision making</li></ul>	1

**Question 26 (b) (i)**

Criteria	Marks
<ul style="list-style-type: none"><li>Identifies suitable computer hardware demonstrating understanding of the scenario</li></ul>	2
<ul style="list-style-type: none"><li>Identifies a feature of hardware</li></ul>	1

**Question 26 (b) (ii)**

Criteria	Marks
<ul style="list-style-type: none"><li>Identifies the category of DSS AND provides justification demonstrating understanding of categories of DSS and context</li></ul>	3
<ul style="list-style-type: none"><li>Identifies a suitable category of DSS AND/OR describes its distinguishing characteristics demonstrating understanding of DSS</li></ul>	2
<ul style="list-style-type: none"><li>Identifies a feature of decision support systems</li></ul>	1

**Question 26 (b) (iii)**

<b>Criteria</b>	<b>Marks</b>
• Provides discussion demonstrating understanding of the importance of AND implications of the need for data quality as it relates to the scenario	4
• Provides description demonstrating understanding of the importance of AND implications of the need for data quality	3
• Identifies issues demonstrating some understanding of the importance of OR the implications of the need for data quality	2
• Identifies a feature of data quality	1

**Question 26 (b) (iv)**

<b>Criteria</b>	<b>Marks</b>
• Proposes alternative application demonstrating a clear understanding of GIS and multiple sources of data AND including the information process of processing.	5
• Proposes alternative application demonstrating an understanding of GIS AND/OR multiple sources of data AND/OR the information process of processing.	4
• Proposes alternative application demonstrating some understanding of a DSS	3
• Provides an alternative application demonstrating limited understanding of DSS	2
• Identifies feature(s) of a DSS	1

**Question 27 (a) (i)**

Criteria	Marks
<ul style="list-style-type: none"><li>Provides an example of the use of a robotic arm indicating some understanding of its application in an automated manufacturing system</li></ul>	1

**Question 27 (a) (ii)**

Criteria	Marks
<ul style="list-style-type: none"><li>Provides description indicating an understanding of sensors</li></ul>	2
<ul style="list-style-type: none"><li>Identifies a sensor or a feature of a sensor</li></ul>	1

**Question 27 (a) (iii)**

Criteria	Marks
<ul style="list-style-type: none"><li>Provides an explanation indicating a clear understanding of CNC in CAD/CAM systems</li></ul>	3
<ul style="list-style-type: none"><li>Provides a description indicating understanding of the use of CNC in manufacturing</li></ul>	2
<ul style="list-style-type: none"><li>Identifies a feature of CNC</li></ul>	1

**Question 27 (b) (i)**

Criteria	Marks
<ul style="list-style-type: none"><li>Provides description of the physical operation of a sensor indicating understanding of the scenario</li></ul>	2
<ul style="list-style-type: none"><li>Identifies a feature related to a sensor</li></ul>	1

**Question 27 (b) (ii)**

Criteria	Marks
<ul style="list-style-type: none"><li>Provides response indicating clear understanding of human-centred systems and the scenario</li></ul>	3
<ul style="list-style-type: none"><li>Identifies a reason/s indicating some understanding of human-centred systems</li></ul>	2
<ul style="list-style-type: none"><li>Identifies a feature of human-centred systems</li></ul>	1

**Question 27 (b) (iii)**

<b>Criteria</b>	<b>Marks</b>
• Provides an explanation indicating a clear understanding of the features and processes of the system and relates to the scenario AND the information processes of processing and displaying	4
• Provides a description indicating an understanding of automated manufacturing systems and/or processes AND the information processes of processing and/or displaying	3
• Provides a description indicating some understanding of an automated manufacturing system	2
• Identifies a feature of an automated manufacturing system	1

**Question 27 (b) (iv)**

<b>Criteria</b>	<b>Marks</b>
• Provides a discussion of an alternative application demonstrating understanding of robots with sensors in context and considers the process of collecting and further developments	5
• Provides description of an alternative application demonstrating understanding of robots and considers the process of collecting OR further developments	4
• Provides identification of a suitable application indicating understanding of robots	3
• Provides an application demonstrating understanding of a robot	2
• Identifies a feature of robots	1

**Question 28 (a) (i)**

Criteria	Marks
<ul style="list-style-type: none"><li>Provides definition of ‘simulation’ indicating some understanding of simulation</li></ul>	1

**Question 28 (a) (ii)**

Criteria	Marks
<ul style="list-style-type: none"><li>Provides a description of how tweening saves time indicating understanding of tweening and the creation of animations</li></ul>	2
<ul style="list-style-type: none"><li>Identifies a feature of animation</li></ul>	1

**Question 28 (a) (iii)**

Criteria	Marks
<ul style="list-style-type: none"><li>Demonstrates an understanding of the similarities AND differences between printed and multimedia versions</li></ul>	3
<ul style="list-style-type: none"><li>Demonstrates some understanding of the similarities AND/OR differences between printed and multimedia versions</li></ul>	2
<ul style="list-style-type: none"><li>Identifies a feature of printed or multimedia content</li></ul>	1

**Question 28 (b) (i)**

Criteria	Marks
<ul style="list-style-type: none"><li>Provides a description indicating understanding of accessibility</li></ul>	2
<ul style="list-style-type: none"><li>Identifies a feature of accessibility</li></ul>	1

**Question 28 (b) (ii)**

Criteria	Marks
<ul style="list-style-type: none"><li>Provides discussion of TWO methods demonstrating understanding of file size and the scenario</li></ul>	3
<ul style="list-style-type: none"><li>Provides description of a method(s) indicating understanding of file size</li></ul>	2
<ul style="list-style-type: none"><li>Identifies a feature of file size</li></ul>	1

**Question 28 (b) (iii)**

<b>Criteria</b>	<b>Marks</b>
• Provides analysis demonstrating understanding of suitable media AND how they relate to the scenario	4
• Provides discussion demonstrating an understanding of media used in multimedia systems	3
• Provides a description demonstrating a limited understanding of media	2
• Identifies a feature of media	1

**Question 28 (b) (iv)**

<b>Criteria</b>	<b>Marks</b>
• Provides a prediction indicating understanding of new technological advancements and flexibility of the emerging technologies and relates to the scenario	5
• Provides a prediction indicating some understanding of new technological advancements and flexibility of the emerging technologies	4
• Provides a response indicating understanding of an emerging technology relevant to multimedia systems	3
• Provides response indicating basic understanding of an emerging technology	2
• Identifies feature(s) of technology	1

# Information Processes and Technology

## 2012 HSC Examination Mapping Grid

### Section I

Question	Marks	Content	Syllabus outcomes
1	1	9.3	H1.1, H6.1, H6.2
2	1	9.3	H1.1, H1.2
3	1	9.1	H6.1
4	1	9.3	H2.2
5	1	9.2	H1.2
6	1	9.3	H1.2, H2.2
7	1	9.3	H1.2
8	1	9.3	H1.2, H2.2
9	1	9.3	H2.2
10	1	9.3	H1.2, H2.2
11	1	9.1	H5.1
12	1	9.2	H6.1
13	1	9.1	H6.1, H5.1
14	1	9.2	H1.1, H2.1, H6.1
15	1	9.2	H1.2
16	1	9.2	H4.1, H1.1
17	1	9.2	H2.1, H3.2
18	1	9.2	H2.1
19	1	9.3	H1.1
20	1	9.1	H1.1

### Section II

Question	Marks	Content	Syllabus outcomes
21 (a)	2	9.2	H1.1, H1.2
21 (b)	3	9.2, 9.3	H1.1, H1.2, H6.1
21 (c)	2	9.1	H1.1, H1.2, H6.1, H6.2
21 (d)	4	9.2	H1.1, H1.2, H6.1, H6.2
22 (a)	2	9.3	H1.1, H6.1, H6.2
22 (b)	3	9.1	H1.1, H1.2, H6.1, H6.2
22 (c)	2	9.1	H3.1, H3.2, H4.1
22 (d)	3	9.3	H2.2
23 (a)	3	9.2	H6.1, H6.2
23 (b)	4	9.2	H6.1, H6.2
23 (c)	3	9.2	H1.1, H2.2
24 (a)	2	9.1	H1.1, H4.1, H5.1, H5.2
24 (b)	2	9.1	H1.1, H1.2

Question	Marks	Content	Syllabus outcomes
24 (c)	5	9.1	H1.1, H2.2, H4.1, H5.1, H5.2

**Section III**

Question	Marks	Content	Syllabus outcomes
25 (a) (i)	1	9.4.1	H5.1, H5.2
25 (a) (ii)	2	9.4.1	H5.1, H5.2, H6.1, H6.2, H3.2
25 (a) (iii)	3	9.4.1	H5.1
25 (b) (i)	2	9.4.1	H5.1, H5.2, H6.1, H6.2
25 (b) (ii)	3	9.4.1	H5.1, H5.2, H6.1, H6.2
25 (b) (iii)	4	9.4.1	H5.1, H5.2, H6.1, H6.2
25 (b) (iv)	5	9.4.1	H4.1, H5.1, H5.2
26 (a) (i)	1	9.4.2	H6.1
26 (a) (ii)	2	9.4.2	H6.1, H6.2
26 (a) (iii)	3	9.4.2	H6.1, H6.2, H3.2
26 (b) (i)	2	9.4.2	H1.1
26 (b) (ii)	3	9.4.2	H5.1, H5.2
26 (b) (iii)	4	9.4.2	H5.1, H5.2
26 (b) (iv)	5	9.4.2	H4.1, H5.1, H5.2, H6.1, H6.2
27 (a) (i)	1	9.4.3	H1.1
27 (a) (ii)	2	9.4.3	H1.1, H1.2
27 (a) (iii)	3	9.4.3	H1.1, H1.2
27 (b) (i)	2	9.4.3	H1.1, H1.2, H2.1, H2.2
27 (b) (ii)	3	9.4.3	H4.1, H6.1, H6.2, H3.2
27 (b) (iii)	4	9.4.3	H1.1, H1.2, H2.1, H2.2
27 (b) (iv)	5	9.4.3	H1.1, H4.1, H2.1, H2.2
28 (a) (i)	1	9.4.4	H1.1
28 (a) (ii)	2	9.4.4	H5.1, H5.2, H6.1, H6.2
28 (a) (iii)	3	9.4.4	H6.1, H6.2
28 (b) (i)	2	9.4.4	H2.1, H2.2, H3.2
28 (b) (ii)	3	9.4.4	H6.1, H6.2
28 (b) (iii)	4	9.4.4	H6.1, H6.2
28 (b) (iv)	5	9.4.4	H2.1, H2.2, H4.1, H6.1, H6.2