The first HSC examination for Information and Digital Technology will be held in 2014.

The Information and Digital Technology examination specifications can be found in the Assessment and Reporting in Information and Digital Technology document at: www.boardofstudies.nsw.edu.au/syllabus_hsc/information-digital-technology.html

The HSC examination in Information and Digital Technology is based on the HSC Content (mandatory and stream focus areas) and employability skills for the Certificate III qualification.

There will be three separate written papers, one for each of the three HSC streams in the syllabus; Web and software applications; Networking and hardware; and Digital animation. Candidates will be required to complete the paper based on the stream they have studied.

The written paper is worth 80 marks. The examination mark for each candidate will be converted to a mark out of 100. The paper will consist of four sections:

- Section I (objective response questions)
- Section II (short-answer questions)
- Section III (structured extended response question) and
- Section IV (extended response question).

There is no expectation that all of the HSC Content and employability skills for the Certificate III qualification in the Information and Digital Technology Curriculum Framework will be examined each year. The examination will test a representative sample of the HSC Content and relevant employability skills in any given year.

The following sample questions provide examples of some questions that may be set in HSC examinations for Information and Digital Technology – Networking and hardware. Each question has been mapped to an HSC Content focus area to show how the sample question relates to syllabus outcomes and content. Where appropriate, the employability skill(s) being assessed are indicated.
Answers for the objective response questions have been italicised. Marking guidelines for one short-answer question (Section II) and one extended response question (Section IV) are provided. The marking guidelines indicate the criteria associated with each mark or mark range. In the examination, students will record their answers to Section III and Section IV in a separate writing booklet.

A rubric indicating general criteria for judging performance for the extended response question in Section IV has been included with the sample question. These criteria apply only to Section IV and are used to assess responses to the extended response question. These criteria are in addition to criteria specific to each question.

The sample questions and marking guidelines provide teachers and students with guidance as to the sort of questions to expect and how they may be marked. They are not meant to be prescriptive. Each year the structure of the examination will conform with the examination specifications. However, the number and type of questions in the examination may focus on different syllabus outcomes and content, or have a different range and balance than those given in this sample set of questions.
Section I  (20 marks)

There will be objective response questions to the value of 20 marks.

Ten questions will be based on the HSC mandatory focus areas and will be the same for all three papers. Ten questions will be specific to the Networking and hardware HSC stream focus area.

Candidates are given four possible answers (A, B, C or D) from which to choose the correct (or best) one. This type of question requires the candidate to have a degree of certainty about their knowledge and understanding of the subject.

The purpose of the other answers (distractors) is to present a range of options that appear to be feasible. Some could be correct in a given set of circumstances but are not the best overall answer. In other cases, distractors may be partially right with some element of incorrect information.

Section I sample questions

Question 1

HSC Content – focus area assessed: Working in the industry
Employability skill assessed: Communication

A closed-question survey has been developed to obtain feedback from 3000 customers whose details are in a company database.

What would be the most efficient method of conducting the survey?

(A) Emails
(B) Interviews
(C) Memoranda
(D) Group meetings
**Question 2**

*HSC Content – focus area assessed: Networking and hardware*

To which category of internal hardware components does RAM belong?

(A) Memory
(B) Expansion slot
(C) Storage device
(D) Central processing unit

**Question 3**

*HSC Content – focus area assessed: Diagnostic testing*

A user wants to detect and clean a virus-infected file as it is opened. Which of the following would best achieve this?

(A) Schedule a local virus scan
(B) Utilise a real-time virus scan
(C) Perform a scheduled network virus scan
(D) Perform a complete virus scan of all hard disks

**Question 4**

*HSC Content – focus area assessed: Networking and hardware*

*Employability skill assessed: Technology*

What type of internet connection would give the fastest speed?

(A) ADSL
(B) Fibre
(C) Wireless
(D) Coaxial cable
Question 5

HSC Content – focus area assessed: Networking and hardware

Which protocol is used to send and receive email?

(A) HTTP
(B) POP
(C) SMTP
(D) TCP/IP
Section II  (30 marks)

- There will be approximately five short-answer questions.
- 15 marks will be based on the HSC mandatory focus areas and will be the same for all three papers.
- 15 marks will be specific to the Networking and hardware HSC stream focus area.
- Questions may contain parts.
- There will be approximately 12 items in total.
- At least two items will be worth from 4 to 8 marks.

Section II sample questions

Question 6 (6 marks)

HSC Content – focus area assessed: Operating system software
Employability skill assessed: Technology

(a) Define the term operating system.

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(b) Compare open-source operating system software with commercial operating system software for desktop devices in terms of the following features.

(i) Hardware requirements ................................................................. 2

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(ii) Licensing agreements ................................................................. 2

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**Question 7 (3 marks)**

**HSC Content – focus area assessed:** Networking and hardware

**Employability skill assessed:** Technology

Describe the function of a switch in a network.

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Question 8 (7 marks)

HSC Content – focus area assessed: Networking and hardware
Employability skills assessed: Problem-solving Technology

(a) Identify TWO transmission media that may be used to connect devices in a small office/home office (SOHO) network.

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(b) A SOHO network has been configured to include the POP protocol.
Why might this action have been taken?

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(c) Describe ONE method for testing the connectivity of hardware in a SOHO network.

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- 8 -
Marking guidelines

**Question 8 (a)**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Names TWO transmission media appropriate for connecting devices in a SOHO network</td>
<td>2</td>
</tr>
<tr>
<td>Names ONE transmission media appropriate for connecting devices in a SOHO network</td>
<td>1</td>
</tr>
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**Question 8 (b)**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provides a valid reason for the inclusion of POP in a SOHO network</td>
<td>2</td>
</tr>
<tr>
<td>Demonstrates a clear understanding of the protocol’s purpose in relation to email access and retrieval</td>
<td>2</td>
</tr>
<tr>
<td>Provides a valid reason for the inclusion of POP in a SOHO network OR</td>
<td>1</td>
</tr>
<tr>
<td>Provides a characteristic/feature of POP</td>
<td></td>
</tr>
</tbody>
</table>

**Question 8 (c)**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identifies a suitable method for testing connectivity of hardware in a SOHO network</td>
<td>3</td>
</tr>
<tr>
<td>Demonstrates a clear understanding of the chosen method</td>
<td></td>
</tr>
<tr>
<td>Identifies a suitable method for testing connectivity of hardware in a SOHO network</td>
<td>2</td>
</tr>
<tr>
<td>Demonstrates some understanding of the chosen method</td>
<td></td>
</tr>
<tr>
<td>Sketches in general terms a method for testing network connectivity</td>
<td>1</td>
</tr>
</tbody>
</table>
A small business is expanding and moving premises. The business will need an updated network at its new office. Existing personal computers (PCs) will also be upgraded. The business owner intends to outsource the work to a local ICT company. An essential requirement is that a variety of hardware can be shared across the organisation.

(a) What are workplace health and safety considerations for the ICT company when it installs this new network?

(b) Explain the factors the ICT company will need to take into account when designing this network.
Section IV  (15 marks)

- There will be one extended response question based on the HSC mandatory focus areas and will be the same for all three papers.
- The question will have an expected length of response of around four pages of an examination writing booklet (approximately 600 words).

In your answer you will be assessed on how well you:
- demonstrate knowledge and understanding relevant to the question
- communicate ideas and information using relevant workplace examples and industry terminology
- present a logical and cohesive response.

Question 10 (15 marks)

HSC Content – focus area assessed:  Diagnostic testing
Employability skills assessed:  Communication
                                      Problem-solving
                                      Technology

A recent survey has identified that new ICT support staff have limited understanding about running standard diagnostic tests.

A training program is being developed to address this issue. The following have been considered for inclusion:
- basic diagnostic procedures
- major areas in which computer problems arise
- sources of technical data and information for fault finding
- the problem-solving process involved.

Prepare a detailed reference guide with relevant information on each of the areas to be included in the training program.
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Addresses all components of the question</td>
<td></td>
</tr>
<tr>
<td>• Provides a cohesive well-reasoned response that reflects a high level of organisation, judgement, synthesis and problem-solving</td>
<td>13–15</td>
</tr>
<tr>
<td>• Demonstrates an in-depth understanding of ICT functions with reference to the scenario used in the question</td>
<td></td>
</tr>
<tr>
<td>• Consistently uses precise ICT terminology to a professional level</td>
<td></td>
</tr>
<tr>
<td>• Communicates in the manner required by the question consistently using standard industry formats</td>
<td></td>
</tr>
<tr>
<td>• Addresses most components of the question</td>
<td></td>
</tr>
<tr>
<td>• Provides a cohesive well-reasoned response showing significant organisational and problem-solving skills</td>
<td>10–12</td>
</tr>
<tr>
<td>• Demonstrates a detailed understanding of ICT functions with reference to the scenario used in the question</td>
<td></td>
</tr>
<tr>
<td>• Uses precise ICT terminology to a level acceptable in industry</td>
<td></td>
</tr>
<tr>
<td>• Communicates in the manner required by the question using standard industry formats</td>
<td></td>
</tr>
<tr>
<td>• Addresses most components of the question</td>
<td></td>
</tr>
<tr>
<td>• Provides a response displaying some organisational and problem-solving skills</td>
<td></td>
</tr>
<tr>
<td>• Demonstrates a basic understanding of ICT functions with limited reference to the scenario used in the question</td>
<td>7–9</td>
</tr>
<tr>
<td>• Uses basic ICT terminology</td>
<td></td>
</tr>
<tr>
<td>• Communicates in the manner required by the question using elements of industry formats</td>
<td></td>
</tr>
<tr>
<td>• Addresses some components of the question</td>
<td></td>
</tr>
<tr>
<td>• Provides a response displaying limited organisational and problem-solving skills</td>
<td></td>
</tr>
<tr>
<td>• Demonstrates a limited understanding of ICT functions</td>
<td>4–6</td>
</tr>
<tr>
<td>• Uses some ICT terminology</td>
<td></td>
</tr>
<tr>
<td>• Communicates in the manner required by the question using few elements of industry formats</td>
<td></td>
</tr>
<tr>
<td>• Addresses minimal components of the question</td>
<td></td>
</tr>
<tr>
<td>• Provides a response displaying limited organisation</td>
<td>1–3</td>
</tr>
<tr>
<td>• Communicates in the manner required by the question using few elements of industry formats</td>
<td></td>
</tr>
</tbody>
</table>