



**CATHOLIC SECONDARY SCHOOLS ASSOCIATION**

**2006 TRIAL HIGHER SCHOOL CERTIFICATE EXAMINATION**

**INFORMATION PROCESSES AND TECHNOLOGY MARKING GUIDELINES**

**Section I**

**20 marks**

<b>Question</b>	<b>Answer</b>	<b>Outcomes Assessed</b>	<b>Targeted Performance Bands</b>
1	B	H2.1	2 – 3
2	D	H4.1	3 – 4
3	A	H2.2	4 – 5
4	C	H2.1	5 – 6
5	D	H1.1	3 – 4
6	D	H6.1	2 – 3
7	B	H5.2	2 – 3
8	C	H6.1	5 – 6
9	C	H5.1	3 – 4
10	D	H1.1	3 – 4
11	A	pH2.1	4 – 5
12	C	H2.2	2 – 3
13	B	H4.1	3 – 4
14	D	H1.1	4 – 5
15	D	H1.2	2 – 3
16	C	H1.1	3 – 4
17	A	H2.2	4 – 5
18	B	H4.1	2 – 3
19	C	H5.1	3 – 4
20	A	H2.2	3 – 4

**DISCLAIMER**

The information contained in this document is intended for the professional assistance of teaching staff. It does not constitute advice to students. Further it is not the intention of CSSA to provide specific marking outcomes for all possible Trial HSC answers. Rather the purpose is to provide teachers with information so that they can better explore, understand and apply HSC marking requirements, as established by the NSW Board of Studies.

No guarantee or warranty is made or implied with respect to the application or use of CSSA Marking Guidelines in relation to any specific trial exam question or answer. The CSSA assumes no liability or responsibility for the accuracy, completeness or usefulness of any Marking Guidelines provided for the Trial HSC papers.

**2301-2**

**Section II**  
**40 marks**

**Question 21** (10 marks)

(a) (2 marks)

**Outcomes Assessed: H7.1**

**Targeted Performance Bands: 2-3**

Criteria	Marks
• Contrasts conflict resolution AND negotiation skills	2
• Compares conflict resolution and negotiation skills OR	1
• Describes conflict resolution or negotiation skills.	

**Sample answer:**

Conflict resolution is concerned with managing and resolving any kind of dispute or disagreement which may arise during the completion of a project. Bargaining and negotiation may have a part to play, however a mediator, active listening and focusing on the common goals also have important roles to play in resolving conflicts.

Negotiation skills may be used in resolving conflicts however, negotiation skills are primarily used to find common ground also known as points of agreement so a project will proceed smoothly. Successful negotiation requires each party to know their minimum requirements which allows bargaining to occur until a satisfactory outcome is reached for both parties.

(b) (3 marks)

**Outcomes assessed: H6.2**

**Targeted Performance Bands: 2-5**

Criteria	Marks
• Thorough description of technical feasibility and aspects considered	3
• Describes some aspects of technical feasibility	2
• Defines or identifies aspects of technical feasibility	1

**Sample answer:**

Technical feasibility is concerned with hardware and software, whether it has been chosen yet, whether it will perform at the required speed or handle the volume of data and whether all components are compatible.

A project can be assessed for technical feasibility by checking if there is existing equipment and/or software which provide the required functionality.

In addition, all hardware and some software have performance or benchmark figures which can be used to assess technical feasibility for example hard disks have spin rates along with read / write rates.

Finally, many vendors now have hardware compatibility lists and software standards together these can also be used to help assess technical feasibility.

**DISCLAIMER**

The information contained in this document is intended for the professional assistance of teaching staff. It does not constitute advice to students. Further it is not the intention of CSSA to provide specific marking outcomes for all possible Trial HSC answers. Rather the purpose is to provide teachers with information so that they can better explore, understand and apply HSC marking requirements, as established by the NSW Board of Studies.

No guarantee or warranty is made or implied with respect to the application or use of CSSA Marking Guidelines in relation to any specific trial exam question or answer. The CSSA assumes no liability or responsibility for the accuracy, completeness or usefulness of any Marking Guidelines provided for the Trial HSC papers.

(c) (5 marks)

**Outcomes assessed: H3.1**

**Targeted Performance Bands: 2-6**

Criteria	Marks
• Thorough and comprehensive discussion of TWO social / ethical issues that could reasonably be faced by Ashton Electronics	5
• Thorough description of TWO social / ethical issues	4
• Discussion of TWO social / ethical issues – not necessarily closely related to this scenario	3
• Description of social / ethical issues	2
• Identifies aspects of social / ethical issues	1

**Sample answer:**

Two social / ethical issues Ashton will need to consider can include – nature of work and security. Nature of work – changing to an on-line store will mean a change in the way work is completed. This means Ashton management will need to think of supporting their employees which will involve training as a significant component. Staff will need to be trained to use technology appropriately and efficiently so that orders are processed in a timely fashion. Staff may also be fearful that the increased use of technology could lead to a reduction in number of staff required – so management will need to address this issue as well to reassure staff.

Security of customer data and other company data now becomes an issue due to the potential for numerous unauthorized people to gain access via the Internet. Ashton management will need to consider security procedures / policies, passwords, firewalls, encryption and backup (recovery) procedures. All of these items will also impact on the retraining of staff mentioned above.

**Question 22** (10 marks)

(a) (2 marks)

**Outcomes assessed: H1.1**

**Targeted Performance Bands: 2-3**

Criteria	Marks
• Correct explanation for duplicated items	2
• Any attempt at explaining the duplicates with something correct	1

**Sample answer:**

One of the main reasons for developing a graphical model is that they are easier and quicker to read and understand. Therefore, it is common and quite acceptable practise to duplicate entities as shown in this diagram – if it helps others read the diagram and understand the system. In this case the flow lines could cross making the diagram difficult to read. The author has decided to remove this problem by preventing any cross over of flow lines and instead duplicates the entities customer and video purchase system.

Another explanation could notice the flow lines have been arranged to show inputs and outputs – but essentially this has been done to prevent crossed flow lines and to enhance reading of the diagram.

**DISCLAIMER**

The information contained in this document is intended for the professional assistance of teaching staff. It does not constitute advice to students. Further it is not the intention of CSSA to provide specific marking outcomes for all possible Trial HSC answers. Rather the purpose is to provide teachers with information so that they can better explore, understand and apply HSC marking requirements, as established by the NSW Board of Studies.

No guarantee or warranty is made or implied with respect to the application or use of CSSA Marking Guidelines in relation to any specific trial exam question or answer. The CSSA assumes no liability or responsibility for the accuracy, completeness or usefulness of any Marking Guidelines provided for the Trial HSC papers.

(b) (4 marks)

**Outcomes assessed: H1.2**

**Targeted Performance Bands: 2-6**

Criteria	Marks
• Thorough, comprehensive and correct description of normalisation based on an example	4
• Thorough, comprehensive and correct description of normalisation	3
• Fair attempt at describing the process of normalisation	2
• Identifies some aspects of normalisation	1

**Sample answer:**

Consider this example:

Students and their choice of sport along with the cost are stored in a database. School rules allow students to choose more than one sport – the fields for activity and cost are duplicated to track this. Some students choose to participate in three sports, which is allowed – again the activity and cost fields are duplicated to accommodate this. Now look at the database table below.

First Name	Surname	Activity 1	Cost 1	Activity 2	Cost 2	Activity 3	Cost 3
John	Smith	Tennis	\$17.00	Tennis	\$10.00	Rugby	\$15.00
Jill	Smith	Swimming	\$15.00	Tennis	\$17.00		
John	Smith	Rugby	\$5.00				
Jack	Whyte	Diving	\$10.00				
Bill	Fields	Cricket	\$12.00	Rugby	\$5.00	Swimming	\$1.00

This is a typical database which has grown from a need to effectively track students, activities and costs. In respect to databases – during the design stage the required tables and fields are selected. In addition, a process of normalisation is completed to ensure the tables are arranged in the most effective, consistent, error free and easiest to use manner.

Normalisation is a process of arranging a database into tables according to certain rules. Each rule delivers a database structure which is called a “normal form”. For example, in the table above it is clear there are duplicate fields - activity and cost. If these are removed we will have a database structure which complies with first normal form or 1NF. This is done below.

(At HSC level you should be able to complete 1NF and 2NF.)

Student Table		2 separate tables have been formed	Activity Table	
First Name	Surname		Activity	Cost
John	Smith		Tennis	\$17.00
Jill	Smith		Rugby	\$15.00
John	Smith		Cricket	\$12.00
Jack	Whyte		Diving	\$10.00
Bill	Fields		Swimming	\$17.00

**Question 22 (b) sample answer continues on page 5**

**DISCLAIMER**

The information contained in this document is intended for the professional assistance of teaching staff. It does not constitute advice to students. Further it is not the intention of CSSA to provide specific marking outcomes for all possible Trial HSC answers. Rather the purpose is to provide teachers with information so that they can better explore, understand and apply HSC marking requirements, as established by the NSW Board of Studies. No guarantee or warranty is made or implied with respect to the application or use of CSSA Marking Guidelines in relation to any specific trial exam question or answer. The CSSA assumes no liability or responsibility for the accuracy, completeness or usefulness of any Marking Guidelines provided for the Trial HSC papers.

Question 22 (b) Sample answer (continued)

This is not the end of the normalisation process. There are still numerous problems with this database including duplicate data items (redundant data), incorrect or different values for the same sport as well as blank fields. We would need to apply the rules of 2NF to remove these problems which are called anomalies. Ultimately, by applying this process of normalisation, we would achieve the best structure for this database – it would consist of numerous, smaller tables with minimal data redundancy and none of the problems mentioned above.

(c)(i) (1 mark)

**Outcomes assessed: H1.1**

**Targeted Performance Bands: 2-4**

Criteria	Marks
<ul style="list-style-type: none"> <li>Correct column identified with a valid reason</li> </ul>	1

**Sample answer:**

The most suitable column for a primary key is Number as it will always be unique.

(c) (ii) (3 marks)

**Outcomes assessed: H2.2**

**Targeted Performance Bands: 2-4**

Criteria	Marks
<ul style="list-style-type: none"> <li>Correct data dictionary using correct techniques.</li> </ul>	3
<ul style="list-style-type: none"> <li>Good attempt likely missing some details such as field width. Some fields allocated inappropriate data type</li> </ul>	2
<ul style="list-style-type: none"> <li>Any attempt that resembles a data dictionary</li> </ul>	1

**Sample answer:**

Field	Field Width (chars)	Data Type	Example	Description
Author	30	Text	Green, Benny	Authors full name
Title	100	Text	The Good Life	
Australian	N/A	Boolean	Yes	
Cost	30	Currency	\$28.00	
Year	4	Number	1975	Year published
Number	9	Text	942.126 GOO	Dewey id number

**DISCLAIMER**

The information contained in this document is intended for the professional assistance of teaching staff. It does not constitute advice to students. Further it is not the intention of CSSA to provide specific marking outcomes for all possible Trial HSC answers. Rather the purpose is to provide teachers with information so that they can better explore, understand and apply HSC marking requirements, as established by the NSW Board of Studies.

No guarantee or warranty is made or implied with respect to the application or use of CSSA Marking Guidelines in relation to any specific trial exam question or answer. The CSSA assumes no liability or responsibility for the accuracy, completeness or usefulness of any Marking Guidelines provided for the Trial HSC papers.

**Question 23** (10 marks)

(a) (i) and (ii) (2 marks)

**Outcomes assessed: H1.1**

**Targeted Performance Bands: 2-3**

Criteria	Marks
• Correct definition of TWO terms	2
• Correct definition of ONE term	1

**Sample answer:**

- (i) **hyperlink:** An element in an electronic document that links to another place in the same document or to an entirely different document. Typically, you click on the hyperlink to follow the link. Hyperlinks are the most essential ingredient of all hypertext systems, including the World Wide Web.
- (ii) **URL:** Uniform Resource Locator. The global address of webpage's and resources on the World Wide Web. The first part of the address indicates what protocol to use, and the second part specifies the IP address /domain name and a folder path where the resource is located.

(b) (2 marks)

**Outcomes assessed: H2.1, H2.2**

**Targeted Performance Bands: 3-4**

Criteria	Marks
• The whole URL is correct	2
• Parts of the URL are correct	1

**Sample answer:**

<http://www.getbookinfo.com?book=Pride-and-Prejudice&show=URL,price&order=price-asc>

(c) (2 marks)

**Outcomes assessed: H2.1, H2.2**

**Targeted Performance Bands: 3-4**

Criteria	Marks
• The whole URL is correct	2
• Parts of the URL are correct	1

**Sample answer:**

[http://www.getbookinfo.com?book=\\*Harry-Potter\\*&show=book,price&order=book-asc](http://www.getbookinfo.com?book=*Harry-Potter*&show=book,price&order=book-asc)

**DISCLAIMER**

The information contained in this document is intended for the professional assistance of teaching staff. It does not constitute advice to students. Further it is not the intention of CSSA to provide specific marking outcomes for all possible Trial HSC answers. Rather the purpose is to provide teachers with information so that they can better explore, understand and apply HSC marking requirements, as established by the NSW Board of Studies.

No guarantee or warranty is made or implied with respect to the application or use of CSSA Marking Guidelines in relation to any specific trial exam question or answer. The CSSA assumes no liability or responsibility for the accuracy, completeness or usefulness of any Marking Guidelines provided for the Trial HSC papers.

(d) (2 marks)

**Outcomes assessed: H4.1**

**Targeted Performance Bands: 4-5**

Criteria	Marks
• A thorough reason with reference to the scenario is given	2
• A limited reason is given	1

**Sample answer:**

Getbookinfo.com makes money by advertising the books that an online bookstore sells. By returning the address and price of a book from a bookstore, getbookinfo exposes more people to the bookstores products and potentially increases their sales.

(e) (2 marks)

**Outcomes assessed: H2.1**

**Targeted Performance Bands: 3-4**

Criteria	Marks
• Gives a clear reason	2
• Gives a limited reason	1

**Sample answer:**

getbookinfo.com does not have a website where users browse to input data. It is all done from hyperlinks on other websites not owned by getbookinfo. It is in this respect that it is not interactive.

**Question 24** (10 marks)

(a) (i) (1 mark)

**Outcomes assessed: H1.1**

**Targeted Performance Bands: 2-3**

Criteria	Marks
• Lists ONE specific feature of a NOS	1

**Sample answer:**

There are lots of answers here. Some of these include:

- login scripts
- deploying applications on events like login/logout
- Assigning rights to network paths and users
- Updating workstations with services like anti-virus/registry changes/imaging software

**DISCLAIMER**

The information contained in this document is intended for the professional assistance of teaching staff. It does not constitute advice to students. Further it is not the intention of CSSA to provide specific marking outcomes for all possible Trial HSC answers. Rather the purpose is to provide teachers with information so that they can better explore, understand and apply HSC marking requirements, as established by the NSW Board of Studies.

No guarantee or warranty is made or implied with respect to the application or use of CSSA Marking Guidelines in relation to any specific trial exam question or answer. The CSSA assumes no liability or responsibility for the accuracy, completeness or usefulness of any Marking Guidelines provided for the Trial HSC papers.

(ii) (2 marks)

**Outcomes assessed: H1.2**

**Targeted Performance Bands: 4-6**

Criteria	Marks
<ul style="list-style-type: none"><li>• Gives an example of a NOS in relation to analysing AND</li><li>• Transmitting</li></ul>	2
<ul style="list-style-type: none"><li>• Gives an example of a NOS in relation to analysing OR</li><li>• Transmitting</li></ul>	1

**Sample answer:**

**Analysing:** A NOS analyses a users rights to check to see if they are allowed to see folders or files

**Transmitting:** Passwords (e.g. on login) are sent (transmitted) across the wire in an encrypted form.

(b) (2 marks)

**Outcomes assessed: H2.2**

**Targeted Performance Bands: 3-6**

Criteria	Marks
<ul style="list-style-type: none"><li>• Shows a clear understanding of client installation or protocol assignment</li></ul>	2
<ul style="list-style-type: none"><li>• has some relevant information relating to client installation or protocol assignment</li></ul>	1

**Sample answer:**

**Client Installation:** Desktop machines (ie clients) have their antivirus software updated by installing the latest signature files. This is done transparently. Eg: at a certain time or via an event such as login.

Clients need software installed as company policies change/update. This can be done in the background or via an interactive process where the client is prompted to acknowledge the install.

**Protocol Assignment:** Network administrators might only allow certain protocols on certain workstations or attached to certain users. Eg: FTP might be granted to some workstations only. POP/IMAP might be disabled on the entire LAN.

A printer can be set up to work in IP only where in fact it ships with lots of protocols (e.g ipx, ndps, cups) i.e. A protocol can be assigned to a printer.

**DISCLAIMER**

The information contained in this document is intended for the professional assistance of teaching staff. It does not constitute advice to students. Further it is not the intention of CSSA to provide specific marking outcomes for all possible Trial HSC answers. Rather the purpose is to provide teachers with information so that they can better explore, understand and apply HSC marking requirements, as established by the NSW Board of Studies.

No guarantee or warranty is made or implied with respect to the application or use of CSSA Marking Guidelines in relation to any specific trial exam question or answer. The CSSA assumes no liability or responsibility for the accuracy, completeness or usefulness of any Marking Guidelines provided for the Trial HSC papers.



(c) (i) (2 marks)

**Outcomes assessed: H2.1**

**Targeted Performance Bands: 2- 4**

Criteria	Marks
• Names and explains the need for the components and their function	2
• Lists TWO components	1

**Sample answer:**

A switch needs to be working correctly in conjunction with network cabling. If either the switch or network cabling is not working then the other is ineffective.

(ii) (3 marks)

**Outcomes assessed: H4.1**

**Targeted Performance Bands: 2-6**

Criteria	Marks
• Gives a thorough reason in relation to the scenario	3
• Gives a basic reason in relation to the scenario	2
• Gives a limited reason	1

**Sample answer:**

If a LAN upgrades a UTP run to a fibre optic cable, then the network must be able to harness the potential increase of bandwidth of the fibre by **ALSO** upgrading the peripheral devices like switches and NICs.

If these are not upgraded as well, then it is likely that the LAN will run at the same bandwidth. E.g. A 100Mbps UTP cable would have 100Mbps switches and 100Mbps NICs.

If fibre optics were introduced then upgrading the switches and NICs to a gigabit would harness a larger bandwidth. Without these additional upgrades the fibre optic cabling itself essentially does not improve the performance of a LAN (in terms of speed/bandwidth).

**Question 25** (20 marks)

(a)(2 marks)

**Outcomes assessed: H1.1**

**Targeted Performance Bands: 2-3**

Criteria	Marks
• Clear definition and an example	2
• Limited definition with an example OR	1
• Clear definition	

**Sample answer:**

MICR stands for Magnetic Ink Character Recognition, it uses a special ink that is magnetised in the form of characters. It is used by banks and found at the bottom of cheques to prove that they are authentic.

**DISCLAIMER**

The information contained in this document is intended for the professional assistance of teaching staff. It does not constitute advice to students. Further it is not the intention of CSSA to provide specific marking outcomes for all possible Trial HSC answers. Rather the purpose is to provide teachers with information so that they can better explore, understand and apply HSC marking requirements, as established by the NSW Board of Studies.

No guarantee or warranty is made or implied with respect to the application or use of CSSA Marking Guidelines in relation to any specific trial exam question or answer. The CSSA assumes no liability or responsibility for the accuracy, completeness or usefulness of any Marking Guidelines provided for the Trial HSC papers.

(b) (3 marks)

**Outcomes assessed: H2.1**

**Targeted Performance Bands: 3-6**

Criteria	Marks
• Clearly explains all three generations	3
• Clearly explains two generations	2
• Explains one generation	1

**Sample answer:**

Grandfather, father, son backup is a full backup which uses generations where the grandfather is the oldest backup and the son is the most recent. When a new backup is done then it is considered the son and then the father becomes the grandfather and the son becomes the father. The grandfather is either archived or has been replaced by the new son working in a rotation system.

(c) (i) (3 marks)

**Outcomes assessed: H4.1**

**Targeted Performance Bands: 2-4**

Criteria	Marks
• Clear reasons for enhancement	3
• Basic reasons for enhancement	2
• Limited reason for enhancement	1

**Sample answer:**

Roberta needs to include a screen with prompts that allows customers to enter customer details and credit card details. There should also be clear instructions on how to enter their data and a help file.

She also needs to include some security software to make sure that the site is secure so that her customers' credit card details are protected.

**DISCLAIMER**

The information contained in this document is intended for the professional assistance of teaching staff. It does not constitute advice to students. Further it is not the intention of CSSA to provide specific marking outcomes for all possible Trial HSC answers. Rather the purpose is to provide teachers with information so that they can better explore, understand and apply HSC marking requirements, as established by the NSW Board of Studies.

No guarantee or warranty is made or implied with respect to the application or use of CSSA Marking Guidelines in relation to any specific trial exam question or answer. The CSSA assumes no liability or responsibility for the accuracy, completeness or usefulness of any Marking Guidelines provided for the Trial HSC papers.

(c) (ii) (3 marks)

**Outcomes assessed: H1.1, H1.2**

**Targeted Performance Bands: 3-5**

Criteria	Marks
<ul style="list-style-type: none"><li>• Discusses the need for security with reasons AND</li><li>• Recommendations</li></ul>	3
<ul style="list-style-type: none"><li>• Discusses the need for security with reasons</li></ul>	2
<ul style="list-style-type: none"><li>• States the need for security with a reason</li></ul>	1

**Sample answer:**

Roberta needs to make sure that her website is equipped with security measures so that her customers' data is not visible to anyone other than the accounts clerk. If the customers' information was accessed, it could be used to steal someone's money by making purchases, someone's identity and it could be an invasion of privacy by having their details.

Roberta needs to include security such as a firewall to keep out intruders. Get customers to enter a password to access their accounts. Also, emailing could be used to confirm orders.

**DISCLAIMER**

The information contained in this document is intended for the professional assistance of teaching staff. It does not constitute advice to students. Further it is not the intention of CSSA to provide specific marking outcomes for all possible Trial HSC answers. Rather the purpose is to provide teachers with information so that they can better explore, understand and apply HSC marking requirements, as established by the NSW Board of Studies.

No guarantee or warranty is made or implied with respect to the application or use of CSSA Marking Guidelines in relation to any specific trial exam question or answer. The CSSA assumes no liability or responsibility for the accuracy, completeness or usefulness of any Marking Guidelines provided for the Trial HSC papers.

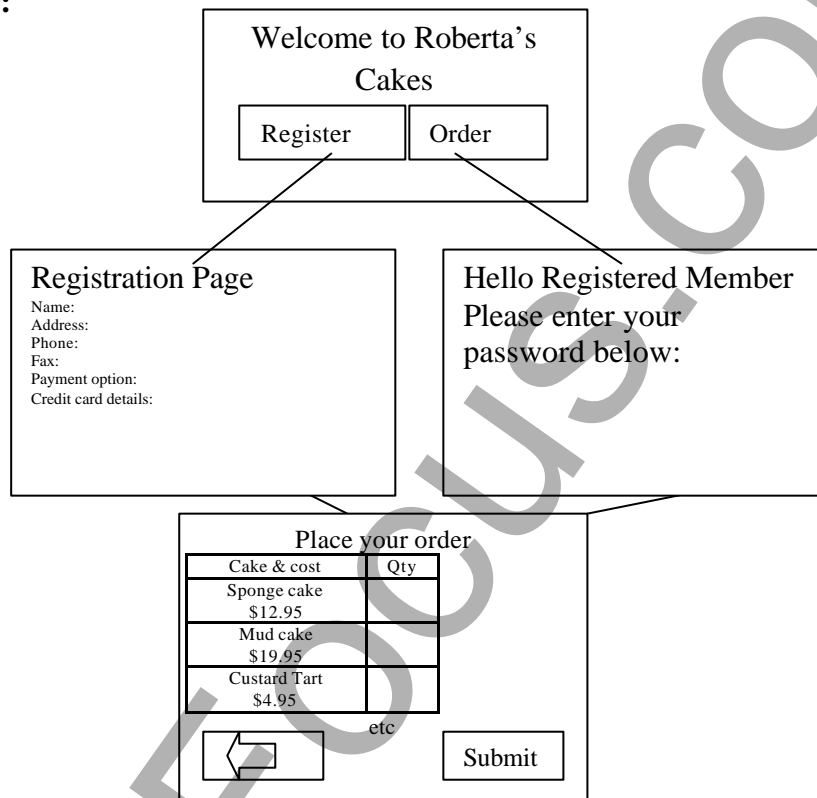
(c) (iii) (4 marks)

**Outcomes assessed: H2.2, H4.1**

**Targeted Performance Bands: 2-6**

Criteria	Marks
• A thorough storyboard with all relevant screens that are clearly labelled	4
• Creates a storyboard with relevant screens	3
• Attempts to create a storyboard with at least two complete screens	2
• Attempts to create a storyboard	1

**Sample answer:**



**DISCLAIMER**

The information contained in this document is intended for the professional assistance of teaching staff. It does not constitute advice to students. Further it is not the intention of CSSA to provide specific marking outcomes for all possible Trial HSC answers. Rather the purpose is to provide teachers with information so that they can better explore, understand and apply HSC marking requirements, as established by the NSW Board of Studies.

No guarantee or warranty is made or implied with respect to the application or use of CSSA Marking Guidelines in relation to any specific trial exam question or answer. The CSSA assumes no liability or responsibility for the accuracy, completeness or usefulness of any Marking Guidelines provided for the Trial HSC papers.

(d) (5 marks)

**Outcomes assessed: H1.1, H2.1, H2.2**

**Targeted Performance Bands: 4-6**

Criteria	Marks
<ul style="list-style-type: none"><li>• Performs the ACID test thoroughly with all of the processes AND</li><li>• Relates to the operation of a credit card system.</li></ul>	4-5
<ul style="list-style-type: none"><li>• Outlines some of the processes of the ACID test</li></ul>	2-3
<ul style="list-style-type: none"><li>• Lists parts of the ACID test</li></ul>	1

**Sample answer:**

Atomicity: All steps involved in the verification and use of the credit card involved in the transaction are successfully completed.

Concurrency: The transaction is successfully sent to the bank database and updated the customer's credit card details.

Isolation: Credit card details and amount owing are updated in the system in a specific order.

Not 2 databases can be updated at the same time.

Durability: The transaction is complete and all data is updated

**Question 26 (20 marks)**

(a) (i) 2 marks

**Outcomes Assessed: H1.2**

**Targeted Performance Bands: 2-3**

Criteria	Marks
<ul style="list-style-type: none"><li>• Full, correct definition of a neural network</li></ul>	2
<ul style="list-style-type: none"><li>• Partially correct definition</li></ul>	1

**Sample Answer**

A neural network is an information system that works like the human brain and is capable of learning. It contains a large number of CPUs connected to each other like nerve cells in the human brain. Neural networks require training.

(a) (ii) 2 marks

**Outcomes Assessed: H1.1**

**Targeted Performance Bands: 2-3**

Criteria	Marks
<ul style="list-style-type: none"><li>• Names AND gives full, clear description of a situation</li></ul>	2
<ul style="list-style-type: none"><li>• Names a situation only OR gives an adequate description</li></ul>	1

**Sample Answer**

Neural networks can be used in character recognition. A neural network can be trained to recognise letters or numbers on envelopes that have been hand written.

**DISCLAIMER**

The information contained in this document is intended for the professional assistance of teaching staff. It does not constitute advice to students. Further it is not the intention of CSSA to provide specific marking outcomes for all possible Trial HSC answers. Rather the purpose is to provide teachers with information so that they can better explore, understand and apply HSC marking requirements, as established by the NSW Board of Studies.

No guarantee or warranty is made or implied with respect to the application or use of CSSA Marking Guidelines in relation to any specific trial exam question or answer. The CSSA assumes no liability or responsibility for the accuracy, completeness or usefulness of any Marking Guidelines provided for the Trial HSC papers.

(b) (i) 2 marks

**Outcomes Assessed: H1.1, H1.2, H6.1**

**Targeted Performance Bands: 3-4**

Criteria	Marks
• Clear explanation of forward chaining AND draws on the example given	2
• Adequate explanation of forward chaining	1

**Sample Answer**

This is an example of forward chaining because the inference engine starts with known facts and rules such as “Did you see the dorsal fin?” and works towards a solution, such as “it was a hump back whale”.

(b) (ii) 2 marks

**Outcomes Assessed: H1.1, H1.2, H6.1**

**Targeted Performance Bands: 3-4**

Criteria	Marks
• Clear explanation of knowledge base AND refers to whale example	2
• Adequate explanation of knowledge base OR refers to whale example	1

**Sample Answer**

The knowledge base contains a set of general facts and if then rules supplied by an expert. For example:

IF the whale is large AND

IF the whale is blue

THEN it is a blue whale.

(b) (iii) 2 marks

**Outcomes Assessed: H1.1, H1.2, H6.1**

**Targeted Performance Bands: 3-4**

Criteria	Marks
• Clear explanation of knowledge base AND refers to whale example	2
• Adequate explanation of knowledge base OR refers to whale example	1

**Sample answer:**

Human experts have the knowledge or expertise in their particular field of study. A marine biologist, with expertise on whales would be required to provide the knowledge behind the whale watching DSS. A knowledge engineer doesn't necessarily know anything about whales, but helps with the design, coding and testing of the DSS software.

**DISCLAIMER**

The information contained in this document is intended for the professional assistance of teaching staff. It does not constitute advice to students. Further it is not the intention of CSSA to provide specific marking outcomes for all possible Trial HSC answers. Rather the purpose is to provide teachers with information so that they can better explore, understand and apply HSC marking requirements, as established by the NSW Board of Studies.

No guarantee or warranty is made or implied with respect to the application or use of CSSA Marking Guidelines in relation to any specific trial exam question or answer. The CSSA assumes no liability or responsibility for the accuracy, completeness or usefulness of any Marking Guidelines provided for the Trial HSC papers.

(c) (i) 2 marks

**Outcomes Assessed:** H1.1, H1.2, H2.1, H6.1

**Targeted Performance Bands:** 3-4

Criteria	Marks
• Correctly identifies the situation as semi-structured AND justifies answer.	2
• Describes feature(s) of semi-structured situation	1

**Sample Answer**

Semistructured. There is a clear method to follow in processing the loan and the requirements are known. There is still some human judgement required and there are alternative outcomes.

(c) (ii) 2 marks

**Outcomes Assessed:** H1.1, H1.2, H2.1, H6.1

**Targeted Performance Bands:** 5-6

Criteria	Marks
• Correct formula	2
• Partially correct formula	1

**Sample Answer**

=IF(C9/C11>1/3,"No","Yes")

(c) (iii) 2 marks

**Outcomes Assessed:** H1.1, H1.2

**Targeted Performance Bands:** 3-5

Criteria	Marks
• Describes TWO what-if scenarios	2
• Describes ONE what-if scenario	1

**Sample answer:**

Robyn could find out how much money the bank will permit her to borrow based on her current level of income. E.g. What if I want to borrow \$300,000? The DSS could also be used to answer questions such as “What if interest rates change – what will my monthly repayments be?

**DISCLAIMER**

The information contained in this document is intended for the professional assistance of teaching staff. It does not constitute advice to students. Further it is not the intention of CSSA to provide specific marking outcomes for all possible Trial HSC answers. Rather the purpose is to provide teachers with information so that they can better explore, understand and apply HSC marking requirements, as established by the NSW Board of Studies.

No guarantee or warranty is made or implied with respect to the application or use of CSSA Marking Guidelines in relation to any specific trial exam question or answer. The CSSA assumes no liability or responsibility for the accuracy, completeness or usefulness of any Marking Guidelines provided for the Trial HSC papers.

(c) (iv) 4 marks

**Outcomes Assessed: H3.1**

**Targeted Performance Bands: 3-6**

Criteria	Marks
• A comprehensive answer that analyses the role of ALL those involved AND recognises the DSS is just a tool.	4
• A detailed answer that analyses the role of MOST of those involved	3
• A detailed answer that analyses the role of SOME of those involved	2
• An adequate answer that analyses the role of ONE of those involved	1

### Sample Answer

Robyn, or even her employer or industry could be blamed for her loss of employment. The DSS could be criticized for being too simple and not taking into account a customer's employment history, but it cannot be blamed, because it only makes a recommendation to humans to support their decision making. The bank officer could be held partially responsible for recommending the loan even though she had not been employed for very long. The Manager is ultimately responsible because he approved the loan.

**Question 27** (20 marks)

(a) (i) (3 marks)

**Outcomes assessed: H1.1, H1.2**

**Targeted Performance Bands: 2-4**

Criteria	Marks
• Provides characteristics and features of CAD AND CAM	3
• Provides characteristics and features of CAD OR CAM	2
• Provides characteristics OR Features of CAD OR CAM	1

### Sample answer:

CAD refers to the use of information technology to design and analyse a product. CAM refers to the specialized information technology tools that automate the manufacturing process. An example of a CAD/CAM system would be where a designer uses a CAD package to design a guitar. The measurements are then sent to a CNC lathe so the guitar can be cut from wood.

(a) (ii) (3 marks)

**Outcomes assessed: H1.1, H1.2**

**Targeted Performance Bands: 2-4**

Criteria	Marks
• Provides characteristics and features of a situation in an AMS where noise could occur AND how it could be reduced.	3
• Provides characteristics and features of a situation in an AMS where noise could occur OR how it could be reduced.	2
• Provides characteristics OR Features of Noise OR how it could be reduced	1

### Sample answer:

Noise is unwanted data or interference. In an AMS noise can be caused by electrical equipment. Shielding surrounding cables and equipment reduces noise.

#### DISCLAIMER

The information contained in this document is intended for the professional assistance of teaching staff. It does not constitute advice to students. Further it is not the intention of CSSA to provide specific marking outcomes for all possible Trial HSC answers. Rather the purpose is to provide teachers with information so that they can better explore, understand and apply HSC marking requirements, as established by the NSW Board of Studies.

No guarantee or warranty is made or implied with respect to the application or use of CSSA Marking Guidelines in relation to any specific trial exam question or answer. The CSSA assumes no liability or responsibility for the accuracy, completeness or usefulness of any Marking Guidelines provided for the Trial HSC papers.



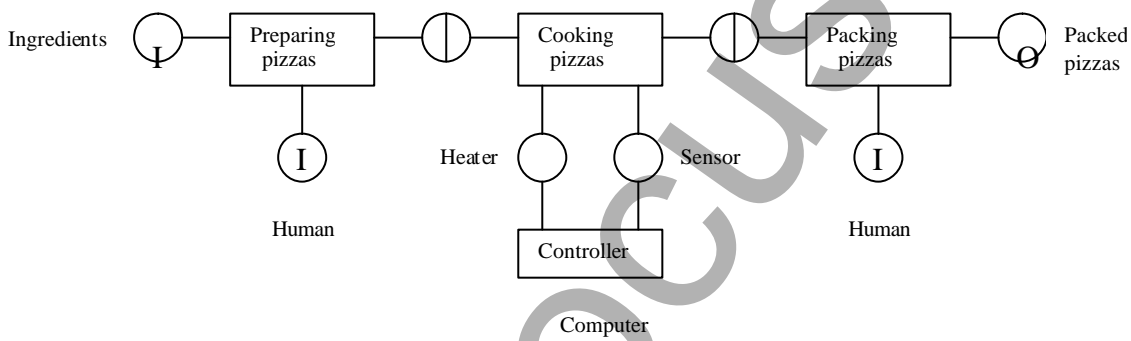
(b) (i) (3 marks)

**Outcomes assessed:** H1.1, H2.1, H6.1, H7.2

**Targeted Performance Bands :** 2-6

Criteria	Marks
<ul style="list-style-type: none"> <li>Correctly draws a block diagram that demonstrates a clear understanding of the situation. The diagram should include: a sensor,</li> <li>controller and actuator.</li> </ul>	3
<ul style="list-style-type: none"> <li>Draws a block diagram that shows an understanding of the situation. Not all components are included or correctly sequenced</li> </ul>	2
<ul style="list-style-type: none"> <li>Demonstrates a limited understanding of the situation by attempting a block diagram</li> </ul>	1

**Sample answer:**



**DISCLAIMER**

The information contained in this document is intended for the professional assistance of teaching staff. It does not constitute advice to students. Further it is not the intention of CSSA to provide specific marking outcomes for all possible Trial HSC answers. Rather the purpose is to provide teachers with information so that they can better explore, understand and apply HSC marking requirements, as established by the NSW Board of Studies.

No guarantee or warranty is made or implied with respect to the application or use of CSSA Marking Guidelines in relation to any specific trial exam question or answer. The CSSA assumes no liability or responsibility for the accuracy, completeness or usefulness of any Marking Guidelines provided for the Trial HSC papers.

(b) (ii)(4 marks)

**Outcomes assessed: H1.1, H1.2**

**Targeted Performance Bands : 2-4**

Criteria	Marks
• Correctly identifies and names 1 sensor and 1 actuator AND describes a situation in which the sensor and actuator would be used	4
• Correctly identifies and names 1 sensor and 1 actuator AND describes a situation in which one would be used	3
• Correctly identifies and names 1 sensor and 1 actuator OR 1 sensor/actuator and describes a situation in which it would be used	2
• Correctly identifies and names 1 sensor or actuator	1

**Sample answer:**

Actuator- an electric motor could be used to move the conveyor belt at a set speed.

Sensor- a temperature sensor could be used to make sure the oven was maintained at the correct temperature.

(c) (i) (3 marks)

**Outcomes assessed: H1.1, H1.2**

**Targeted Performance Bands : 2 – 4**

Criteria	Marks
• Demonstrates a clear understanding of the type of processing used at Nick's Pizzas by selecting the best option, continuous and providing a good argument as to its appropriateness.	3
• Demonstrates a limited understanding of the type of processing used at Nick's Pizzas by selecting an option and providing some elaboration as to its appropriateness.	2
• Identifies continuous with no justification.	1

**Sample answer:**

Nicks pizzas would use a continuous type of production, as the machinery would not have to be changed once set up as it is only used to make pizzas . The system could produce pizza's 24/7 if required with the need to only change the human workers at regular intervals

**DISCLAIMER**

The information contained in this document is intended for the professional assistance of teaching staff. It does not constitute advice to students. Further it is not the intention of CSSA to provide specific marking outcomes for all possible Trial HSC answers. Rather the purpose is to provide teachers with information so that they can better explore, understand and apply HSC marking requirements, as established by the NSW Board of Studies.

No guarantee or warranty is made or implied with respect to the application or use of CSSA Marking Guidelines in relation to any specific trial exam question or answer. The CSSA assumes no liability or responsibility for the accuracy, completeness or usefulness of any Marking Guidelines provided for the Trial HSC papers.

(c) (ii) (3 marks)

**Outcomes assessed:** H3.1, H3.2, H4.1, H5.2

**Targeted Performance Bands:** 2-6

Criteria	Marks
• Demonstrates a clear understanding of the impact of AMS on the nature of work at Nick's Pizzas by clearly describing relevant issues.	3
• Demonstrates a limited understanding of the impact of AMS on the nature of work. Identifies an issue and provides some relevant elaboration on the issue.	2
• Demonstrates a limited understanding of the impact of AMS on the nature of work. Identifies 1 issue.	1

**Sample answer:**

**Reskilling;** Workers need training to be able to perform routine maintenance on the robots and machinery. They may need retraining in customer service positions or putting toppings on Pizza.

**Health and safety;** Workers job has become safer as they are no longer close to a conveyor belt and they are no longer doing manual work lifting pizzas off the conveyor belt and packing them. They no longer are in danger of burns as they are not involved with handling the hot pizzas or trays.

**Job Satisfaction;** There are no longer dull and repetitive jobs to perform the workers would have varied jobs such as cleaning, machine maintenance, customer service, putting toppings on the Pizzas.

**Question 28** (20 marks)

(a) (i) (2 marks)

**Outcomes assessed:** H1.2

**Targeted Performance Bands:** 2-3

Criteria	Marks
• Provides an accurate definition of the term, including all relevant qualities.	2
• Provides an accurate definition of the term OR provides some relevant qualities.	1

**Sample answer**

Resolution is used to describe and measure the quality and detail of the image. It is measured by the number of pixels across and the number of pixels down the screen. Eg: 800x600. The more pixels on the screen, the better the image.

**DISCLAIMER**

The information contained in this document is intended for the professional assistance of teaching staff. It does not constitute advice to students. Further it is not the intention of CSSA to provide specific marking outcomes for all possible Trial HSC answers. Rather the purpose is to provide teachers with information so that they can better explore, understand and apply HSC marking requirements, as established by the NSW Board of Studies.

No guarantee or warranty is made or implied with respect to the application or use of CSSA Marking Guidelines in relation to any specific trial exam question or answer. The CSSA assumes no liability or responsibility for the accuracy, completeness or usefulness of any Marking Guidelines provided for the Trial HSC papers.

(a) (ii) (2 marks)

**Outcomes assessed: H1.2**

**Targeted Performance Bands: 2-3**

Criteria	Marks
• Provides an accurate description of the term	2
• Provides an accurate definition of the term OR provides some relevant quality.	1

**Sample answer:**

Warping is a method of animation used to distort an image. An image can be gradually distorted by repositioning the pixels.

(b)(i) (2 marks)

**Outcomes assessed: H2.2**

**Targeted Performance Bands: 2-3**

Criteria	Marks
• Accurately provides a comprehensive list of relevant information technology, including hardware AND software.	2
• Provides a list of information technology required, including hardware OR software.	1

**Sample answer:**

The hardware needed for collection includes:

- PC with high processing power, large storage space, sound card and video card
- Monitor with good resolution
- Digital video camera

The software needed would include:

- Imaging software
- Video camera software
- Presentation software

**DISCLAIMER**

The information contained in this document is intended for the professional assistance of teaching staff. It does not constitute advice to students. Further it is not the intention of CSSA to provide specific marking outcomes for all possible Trial HSC answers. Rather the purpose is to provide teachers with information so that they can better explore, understand and apply HSC marking requirements, as established by the NSW Board of Studies.

No guarantee or warranty is made or implied with respect to the application or use of CSSA Marking Guidelines in relation to any specific trial exam question or answer. The CSSA assumes no liability or responsibility for the accuracy, completeness or usefulness of any Marking Guidelines provided for the Trial HSC papers.

(b) (ii) (2 marks)

**Outcomes assessed: H2.1**

**Targeted Performance Bands: 2-4**

Criteria	Marks
• Correctly identifies an expert in multimedia AND describes their role relevant to the scenario.	2
• Correctly identifies an expert in multimedia OR describes an area of expertise for a typical multimedia project.	1

**Sample answer:**

Some experts can include:

- A system designer can be hired to plan and organize all of the hardware and software required for the DVD presentation.
- A project manager can be hired to organize and oversee the scheduling of various tasks to ensure that the DVD is completed on time.
- Technical staff can include types of artists and technicians who can edit the video material, design the layout, produce a theme and add text and sound to the DVD.

(c)(i) (2 marks)

**Outcomes assessed: H1.1**

**Targeted Performance Bands: 3-4**

Criteria	Marks
• Relates the essential components of digitised sound into an accurate process.	2
• Identifies relevant factors in digitising sound.	1

**Sample answer:**

Digitised audio files are usually in the form of MIDI files or waveform files and a PC needs a soundcard to be able to play them. Sound can be digitised by consistently measuring the pitch or frequency and volume or amplitude of the audio file.

(c)(ii) (3 marks)

**Outcomes assessed: H1.1, H2.1**

**Targeted Performance Bands: 3-6**

Criteria	Marks
• Demonstrates a thorough understanding of the difference between sampling rate and size	3
• Demonstrates a basic understanding of sampling rate and size	2
• Demonstrates some understanding of sampling rate OR size	1

**Sample answer:**

When digitising audio files the sampling rate is the number of times a sample (pitch or frequency) is taken from the sound wave and this is calculated per second. During a sample, the amplitude or volume of the wave is measured in Kilohertz and converted to a decimal.

Eg: 44.1 kHz (44 100 samples per second).

While the sample size measures the number of bits used per sample. Eg: 16-bit sound which is used for music in stereo.

**DISCLAIMER**

The information contained in this document is intended for the professional assistance of teaching staff. It does not constitute advice to students. Further it is not the intention of CSSA to provide specific marking outcomes for all possible Trial HSC answers. Rather the purpose is to provide teachers with information so that they can better explore, understand and apply HSC marking requirements, as established by the NSW Board of Studies.

No guarantee or warranty is made or implied with respect to the application or use of CSSA Marking Guidelines in relation to any specific trial exam question or answer. The CSSA assumes no liability or responsibility for the accuracy, completeness or usefulness of any Marking Guidelines provided for the Trial HSC papers.

(c)(iii) (3 marks)

**Outcomes assessed: H3.1**

**Targeted Performance Bands: 2-5**

Criteria	Marks
• Provides detailed points for/against the use of compressed audio files AND makes an accurate judgment of the value of compressed audio files.	3
• Provides points for/against the use of compressed audio files AND makes a judgment of the value of compressed audio files.	2
• Provides points for/against the use of compressed audio files.	1

**Sample answer:**

The use of audio files has grown significantly since the introduction of free music websites and the widespread use of Mp3 players. However, there is also a need to keep these file sizes down so that users can store more files.

Mp3 files are the most commonly used files, they are compressed files. Where redundant data in the audio file is removed however, there is a loss in the quality of the music.

There are other audio compression techniques, some work on:

- removing any silence from the entire sample
- Removing information which the ear would not hear anyway

Unfortunately, if there is a high compression rate the user can save more files but some audio quality will be lost.

(d) (4 marks)

**Outcomes assessed: H3.1, H3.2, H4.1**

**Targeted Performance Bands: 2-6**

Criteria	Marks
• Accurately identifies one emerging technology and in detail provides positive and negative aspects of its impact on multimedia, demonstrating a depth of knowledge and understanding.	4
• Accurately identifies one emerging technology and provides positive or negative aspects of its impact on multimedia, demonstrating relevant knowledge and understanding	2-3
• Outlines one emerging technology.	1

**Sample answer:**

There are many suitable answers here, some may include:

- Size and shape of MP3/MP4 players
- New Mobile phones and their multi-media capabilities
- Special effects in movies and film clips
- DVD/Video recorders make it possible to convert videos into DVDs and record television programs on a DVD.

Note: the issue must be critically evaluated.

**DISCLAIMER**

The information contained in this document is intended for the professional assistance of teaching staff. It does not constitute advice to students. Further it is not the intention of CSSA to provide specific marking outcomes for all possible Trial HSC answers. Rather the purpose is to provide teachers with information so that they can better explore, understand and apply HSC marking requirements, as established by the NSW Board of Studies.

No guarantee or warranty is made or implied with respect to the application or use of CSSA Marking Guidelines in relation to any specific trial exam question or answer. The CSSA assumes no liability or responsibility for the accuracy, completeness or usefulness of any Marking Guidelines provided for the Trial HSC papers.

HSCFOCUS.COM

BLANK PAGE

**DISCLAIMER**

The information contained in this document is intended for the professional assistance of teaching staff. It does not constitute advice to students. Further it is not the intention of CSSA to provide specific marking outcomes for all possible Trial HSC answers. Rather the purpose is to provide teachers with information so that they can better explore, understand and apply HSC marking requirements, as established by the NSW Board of Studies.

No guarantee or warranty is made or implied with respect to the application or use of CSSA Marking Guidelines in relation to any specific trial exam question or answer. The CSSA assumes no liability or responsibility for the accuracy, completeness or usefulness of any Marking Guidelines provided for the Trial HSC papers.

HSCFOCUS.COM

BLANK PAGE

**DISCLAIMER**

The information contained in this document is intended for the professional assistance of teaching staff. It does not constitute advice to students. Further it is not the intention of CSSA to provide specific marking outcomes for all possible Trial HSC answers. Rather the purpose is to provide teachers with information so that they can better explore, understand and apply HSC marking requirements, as established by the NSW Board of Studies.

No guarantee or warranty is made or implied with respect to the application or use of CSSA Marking Guidelines in relation to any specific trial exam question or answer. The CSSA assumes no liability or responsibility for the accuracy, completeness or usefulness of any Marking Guidelines provided for the Trial HSC papers.