
2019 HSC Information and Digital Technology Web and Software Applications Marking Guidelines

Section I

Multiple-choice Answer Key

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

Section II

Question 21

Criteria	Marks
<ul style="list-style-type: none"> • Outlines the difference between direct and indirect discrimination • Provides an example of each 	3
<ul style="list-style-type: none"> • Shows some understanding of direct and/or indirect discrimination 	2
<ul style="list-style-type: none"> • Identifies a feature of discrimination 	1

Sample answer:

Direct discrimination is aimed at the individual, for example, excluding a person from a training session. Indirect discrimination refers to when actions may not be directed at one person but still cause harm, for example, running a training course when part-time staff are not available.

Answers could include:

Direct discrimination

- Includes a physical component not required for the job but making it unsuitable for a person with disabilities.

Indirect discrimination

- A person with young children may not be able to attend after hours training
- Applying a fee that may hinder low income people from participating
- Running a training course online only or at only one location.

Question 22 (a)

Criteria	Marks
• Identifies TWO functions of an operating system	2
• Identifies ONE function of an operating system	1

Sample answer:

Two functions of an operating system are to manage all software applications running in a computer and to allocate and use a computer's resources such as memory.

Answers could include:

- Access and security
- Central processing unit (CPU) time
- Hard disk space
- Peripheral devices
- To provide a user interface.

Question 22 (b)

Criteria	Marks
• Describes ways to optimise an operating system	3
• Identifies ways to optimise an operating system OR	2
• Describes ONE way to optimise an operating system	
• Identifies ONE way to optimise an operating system	1

Sample answer:

An operating system can be optimised to suit the needs of users. This can include adjusting settings such as icon size and screen colours. Workplace requirements can be included in order to make users more efficient. This can include the removal of games and placing commonly used software on the taskbar. The operating system may also be customised to cater for individual needs. For example, a person with disabilities may use sticky keys to operate the keyboard with one hand or magnification to enlarge screen elements.

Answers could include:

- By removing unwanted programs at startup to free up resources
- Contrasting screen colours for disabilities such as vision impairment.

Question 23 (a)

Criteria	Marks
• Outlines possible causes	3
• Outlines ONE possible cause OR • Identifies possible causes	2
• Identifies ONE possible cause	1

Sample answer:

The slow performance could be due to the hard disk being full which restricts the size of the swap file. Reduced battery capacity could cause the device to shutdown automatically. This is commonly due to the age of the battery.

Answers could include:

- 3rd party apps
- OS is no longer supported
- OS is not up to date (patches/updates).

Question 23 (b)

Criteria	Marks
• Justifies relevant strategies	4
• Identifies relevant strategies • Justifies a relevant strategy	3
• Identifies relevant strategies OR • Justifies a relevant strategy	2
• Identifies a relevant strategy	1

Sample answer:

The business could implement a series of scheduled maintenance checks. These could include operating system updates, antivirus updates and scanning in real-time. This will ensure that vulnerabilities in the operating system do not result in virus infections. The screen and hardware devices should be periodically cleaned. Dust is abrasive. Removing the dust will improve the reliability of the desktop computers.

Answers could include:

- Application updates
- Consider the environmental conditions eg room temperature.

Question 24 (a)

Criteria	Marks
• Identifies an advantage AND a disadvantage	2
• Identifies an advantage OR a disadvantage	1

Sample answer:

One advantage is that a text editor will not save extraneous document information such as document author, word count and non-printable characters. One disadvantage is that it does not allow for a live WYSIWYG view of the webpage.

Answers could include:

Knowledge of HTML is required.

Question 24 (b)

Criteria	Marks
• Outlines TWO common issues	2
• Outlines ONE common issue	1

Sample answer:

Some browsers may not support Flash, CSS or JavaScript. Different browsers may display website content differently eg extra spacing.

Question 24 (c)

Criteria	Marks
• Explains benefits of using an external CSS file compared to embedding CSS within HTML code	4
• Describes benefits of using an external CSS file compared to embedding CSS within HTML code	3
• Shows some understanding of using an external CSS file and/or embedding CSS within HTML code	2
• Provides some relevant information	1

Sample answer:

Using an external CSS file allows the same file to be used across the whole website. If changes are required, they only need to be made once. If CSS is embedded in the HTML code, the changes will be required for every webpage in the website.

Correcting errors in the CSS code is faster when using an external file. Testing the CSS file will only need to be done once to ensure all design features are correct. When using embedded CSS, all webpages will need testing.

Referencing an external CSS file ensures all webpages will have a consistent design.

Question 25 (a)

Criteria	Marks
• Justifies TWO form components	2
• Recognises ONE form component	1

Sample answer:

Radio buttons may be used in Question 1 as only one selection is allowed. Checkboxes may be used in Question 2 as multiple selections are allowed.

Answers could include:

A dropdown list may also be used in Question 1 as only one selection is allowed.

Question 25 (b)

Criteria	Marks
• Justifies an appropriate chart type	2
• Identifies an appropriate chart type	1

Sample answer:

The age of game player question could use a pie chart as it shows each option as a percentage of the whole data easily.

Answers could include:

- Column graph (showing the highest option clearly)
- Line graph (showing cumulative result clearly).

Question 26

Criteria	Marks
• Explains advantages of using online help rather than a printed manual	3
• Provides advantages of using online help rather than a printed manual OR	2
• Explains an advantage of using online help rather than a printed manual	1
• Provides an advantage of using online help	

Sample answer:

Online help will be more likely to be up to date for the latest version of the software. It is easier to update the information and any errors, and to be quickly available for users compared to a printed manual. Online help may include tutorials, video demonstrations and/or simulated sequences which provide step-by-step instructions, benefiting a broader audience.

Section III

Question 27 (a)

Criteria	Marks
<ul style="list-style-type: none"> • Outlines the benefits of using templates and version control in this scenario 	3
<ul style="list-style-type: none"> • Identifies the benefits of using templates and/or version control in this scenario OR <ul style="list-style-type: none"> • Outlines a benefit of using templates or version control in this scenario 	2
<ul style="list-style-type: none"> • Provides some relevant information 	1

Sample answer:

Version control allows the currency of files to be identified. Templates ensure that the report document maintains a consistent design and layout. Templates can be designed to meet a specific purpose, such as following a consistent style guide, and meeting business requirements by including logos and contact information.

Answers could include:

Templates allow for efficient and accurate data entry by providing essential headings, automated referencing, form elements and placeholder text to ensure the data is entered correctly. Templates can reduce errors in data entry by providing data validation elements or placeholder text to assist template data entry.

Question 27 (b)

Criteria	Marks
<ul style="list-style-type: none"> • Discusses a suitable method for uploading the report 	4
<ul style="list-style-type: none"> • Describes a suitable method for uploading the report 	3
<ul style="list-style-type: none"> • Shows some understanding of a file transfer method 	2
<ul style="list-style-type: none"> • Provides some relevant information 	1

Sample answer:

The staff could use the file transfer protocol (FTP) to upload the report.

The advantages of using FTP for file transfer are that it is a simple process that can be readily performed by a range of staff and does not require specialist skills. It is supported natively by a number of applications which means it can be selected from within a program.

The disadvantages of FTP are that it can be slow to transfer large files and the transfer is often not encrypted and may not be secure.

Question 27 (c)

Criteria	Marks
• Comprehensively justifies suitable strategies for security and protection of data	8
• Justifies suitable strategies for security and protection of data	6–7
• Describes relevant strategies for security and protection of data	4–5
• Identifies relevant strategies for security and protection of data OR • Outlines a relevant strategy for security or protection of data	2–3
• Shows a basic understanding of security or protection of data	1

Sample answer:

Strategies to ensure the security and protection of data include anti-virus real-time scanning and scheduled updates. Scheduled updates for virus definitions will ensure the highest level of protection against virus attacks. A virus can cause the file to become corrupted, modified or deleted. Real-time scanning will check all incoming files to determine that no viruses are present. Some viruses such as worms can use vulnerabilities in the operating system.

Making sure that operating system updates are performed regularly is very important. It ensures that all known vulnerabilities are patched to prevent unauthorised access to the system.

Passwords are used to control access to the files, and prevent unauthorised access. Effective passwords should contain a combination of upper and lower case letters, numbers and symbols. A password generator could be used to generate effective passwords.

Individual permissions can be given to user accounts to limit the access to files and folders on a network. These permissions could be set to read only, modify or write for files. The permissions could also prevent the user from accessing or viewing the contents of folders on the network.

Answers could include:

- The system should include firewalls to prevent hacking from external sources.
- Backups are required to ensure that essential data is not lost due to hardware or software failure.
- UPS improves the reliability and reduces the risk of data loss due to power failures or surge.

Section IV

Question 28

Criteria	Marks
<ul style="list-style-type: none"> Addresses all components of the question Provides a cohesive, well-reasoned, sequenced response that reflects a high level of organisation, judgement, synthesis and problem-solving skills Demonstrates an in-depth understanding of the issues in the scenario Consistently uses relevant industry terminology 	13–15
<ul style="list-style-type: none"> Addresses most components of the question Provides a reasoned, sequenced response that reflects a high level of organisation and problem-solving skills Demonstrates a detailed understanding of the issues in the scenario Uses relevant industry terminology 	10–12
<ul style="list-style-type: none"> Addresses the majority of the components of the question Provides a response displaying sound organisation and problem-solving skills Demonstrates a sound understanding of the issues in the scenario Uses some relevant industry terminology 	7–9
<ul style="list-style-type: none"> Addresses some components of the question Provides a response displaying some organisation and problem-solving skills Demonstrates some understanding of the issues in the scenario 	4–6
<ul style="list-style-type: none"> Addresses at least one component of the question Provides a response displaying basic organisation Demonstrates a basic understanding of the issues in the scenario 	1–3

Answers could include:

Human costs

Staff morale may be affected if team members need to pick up extra work.

Ensuring that there is effective communication between the team members will make it easier to share the duties.

Economic costs

Economic or financial costs are usually the most visible costs that can be counted or measured. The economic costs to the business would include paying sick leave, training new staff, hiring of temporary staff to fill in for the worker. The client could potentially have increased project costs.

Organisational costs

The cost to the organisation could be loss of business as they do not have the resources to take on extra/new work or clients, a delay in the current project and not being able to deliver the project on time. This could then affect the client as they would need to put in strategies to overcome the delay in the project.

Work Health and Safety Committee provides information and manages the health and safety of employees to prevent workplace injuries.

Documentation of the project is necessary for ease of handover if a new team member has been employed.

Documentation could include:

- Manuals, guides
- Plans.

Strategies to minimise costs

Prevention is better than cure. The business must ensure it is adhering to all government mandated work, health and safety laws, to ensure the safe working conditions of their employees. The employee should also obey the practices put in place by the employer to avoid potential injuries.

If the employee is able to perform their work duties from home, the business could allow the employee to work by telecommuting. As long as the employee has phone and internet access they would still be able to conduct their duties. Cloud technologies allow them to save all files in a central location and they could share the files with other employees and the client involved in the project.

Allowing the employee to work more flexible hours will give them the opportunity to attend their rehabilitation and physio sessions. Using software, such as Skype for Business, will allow the employee to still attend or be present during meetings by dialling in.

2019 HSC Information and Digital Technology

Web and software applications

Mapping Grid

Section I

Question	Marks	HSC content – focus area
1	1	(Mandatory) Working in the industry — nature of the industry – page 24
2	1	(Mandatory) Safety — work health and safety (WHS) – page 37
3	1	(Mandatory) Operating system software — installing an operating system –page 30
4	1	(Mandatory) Working in the industry — employment – page 24
5	1	(Mandatory) Diagnostic testing — destructive and malicious software protection – page 34
6	1	(Mandatory) Operating system software — operating systems – page 29
7	1	(Mandatory) Diagnostic testing — destructive and malicious software protection – page 35
8	1	(Mandatory) Operating system software — configuring an operating system – page 31
9	1	(Mandatory) Diagnostic testing — troubleshooting – page 33
10	1	(Mandatory) Operating system software — installing an operating system – page 30
11	1	(Stream) Web and software applications — commercial software packages – page 43
12	1	(Stream) Web and software applications — commercial software packages – page 43
13	1	(Stream) Web and software applications — additional features and functions specific to word processing, spreadsheet and web authoring software – page 44
14	1	(Stream) Web and software applications — features and functions common across word processing, spreadsheet and web authoring software – page 44
15	1	(Stream) Web and software applications — additional features and functions specific to word processing, spreadsheet and web authoring software – page 45
16	1	(Stream) Web and software applications — features and functions specific to word processing, spreadsheet and web authoring software – page 44
17	1	(Stream) Web and software applications — additional features and functions specific to word processing, spreadsheet and web authoring software – page 45
18	1	(Stream) Web and software applications — additional features and functions specific to word processing, spreadsheet and web authoring software – page 44
19	1	(Stream) Web and software applications — document and website production requirements – page 43
20	1	(Stream) Web and software applications — features and functions common across word processing, spreadsheet and web authoring software – page 44

Section II

Question	Marks	HSC content – focus area
21	3	(Mandatory) Working in the industry — anti-discrimination – page 25
22 (a)	2	(Mandatory) Operating system software — operating systems – page 29
22 (b)	3	(Mandatory) Operating system software — optimising an operating system – page 31
23 (a)	3	(Mandatory) Diagnostic testing — troubleshooting – page 33
23 (b)	4	(Mandatory) Diagnostic testing — preventative maintenance – page 34

24 (a)	2	(Stream) Web and software applications — document and website production requirements – page 43
24 (b)	2	(Stream) Web and software applications — website authoring – page 45
24 (c)	4	(Stream) Web and software applications — additional features and functions specific to word processing, spreadsheet and web authoring software – page 45
25 (a)	2	(Stream) Web and software applications — additional features and functions specific to word processing, spreadsheet and web authoring software – page 44
25 (b)	2	(Stream) Web and software applications — additional features and functions specific to word processing, spreadsheet and web authoring software – page 45
26	3	(Stream) Web and software applications — problem-solving – page 45

Section III

Question	Marks	HSC content – focus area
27 (a)	3	(Stream) Web and software applications — features and functions common across word processing, spreadsheet and web authoring software – page 44
27 (b)	4	(Stream) Web and software applications — features and functions common across word processing, spreadsheet and web authoring software – page 44
27 (c)	8	(Stream) Web and software applications — features and functions common across word processing, spreadsheet and web authoring software – page 44

Section IV

Question	Marks	HSC content – focus area
28	15	(Mandatory) Safety — work health and safety (WHS) – page 37 (Mandatory) Working in the industry — nature of the industry – page 24