

STUDENT NUMBER           Letter

# VCE VET INFORMATION, DIGITAL MEDIA AND TECHNOLOGY

## Written examination

Monday 12 November 2018

Reading time: 9.00 am to 9.15 am (15 minutes)

Writing time: 9.15 am to 10.45 am (1 hour 30 minutes)

## QUESTION AND ANSWER BOOK

### Structure of book

<i>Section</i>	<i>Number of questions</i>	<i>Number of questions to be answered</i>	<i>Number of marks</i>
A	20	20	20
B	20	20	70
			Total 90

- Students are permitted to bring into the examination room: pens, pencils, highlighters, erasers, sharpeners, rulers and one scientific calculator.
- Students are NOT permitted to bring into the examination room: blank sheets of paper and/or correction fluid/tape.

#### Materials supplied

- Question and answer book of 22 pages
- Answer sheet for multiple-choice questions

#### Instructions

- Write your **student number** in the space provided above on this page.
- Check that your **name** and **student number** as printed on your answer sheet for multiple-choice questions are correct, **and** sign your name in the space provided to verify this.
- All written responses must be in English.

#### At the end of the examination

- Place the answer sheet for multiple-choice questions inside the front cover of this book.

**Students are NOT permitted to bring mobile phones and/or any other unauthorised electronic devices into the examination room.**

**SECTION A – Multiple-choice questions****Instructions for Section A**

Answer **all** questions in pencil on the answer sheet provided for multiple-choice questions.

Choose the response that is **correct** or that **best answers** the question.

A correct answer scores 1; an incorrect answer scores 0.

Marks will **not** be deducted for incorrect answers.

No marks will be given if more than one answer is completed for any question.

**Question 1**

Which one of the following hardware components connects two or more networks?

- A. router
- B. switch
- C. wireless access point
- D. network interface card (NIC)

**Question 2**

A firewall is used to

- A. allow anyone onto the network.
- B. prevent unauthorised access to information on the network.
- C. stop anyone from outside the network gaining access to the network.
- D. upload and download a user's encrypted files to and from the internet.

**Question 3**

Sleep timers, wake-on-LAN and hibernate settings are examples of installation components that are used to

- A. configure virtual memory.
- B. safely remove peripherals.
- C. configure power management.
- D. prepare OS installation options.

**Question 4**

A network administrator is required to replace a faulty NIC on a server.

What type of documentation is required to complete this task?

- A. tutorial
- B. quick start guide
- C. content-sensitive help
- D. technical documentation

**Question 5**

What is a function of the DHCP?

- A. allocates usernames and passwords
- B. allocates a friendly name to a computer
- C. allows a computer to access the internet
- D. allocates an IP address to a computer's NIC

**Question 6**

SSDs are not usually defragmented because

- A. defragmentation will reduce the I/O rate.
- B. defragmentation will increase the I/O rate.
- C. each location has a limited number of write/erase cycles.
- D. SSDs do not have free space to temporarily store data during defragmentation.

**Question 7**

After receiving client feedback, it is important to

- A. add all feedback to the fault log.
- B. email the suggestions to all staff.
- C. make all changes suggested by the client.
- D. review the feedback and identify areas for improvement.

**Question 8**

To prepare a disk drive for use with an OS, a number of procedures are performed.

What is the appropriate order in which these procedures should be carried out?

- A. format the drive → partition the drive → start the installation
- B. partition the drive → format the drive → start the installation
- C. defragment the drive → format the drive → partition the drive
- D. start the installation → defragment the drive → format the drive

**Question 9**

Garry has been asked to create user documentation for a new game for mobile devices, which has just been created for an app store.

What type of user documentation would be best suited to the end user?

- A. brochure
- B. user guide
- C. online help
- D. training material

**Question 10**

When listening to a client explain a problem, it is important that a Help Desk Operator repeat back to the client what has been said in the operator's own words, as this will ensure that

- A. accurate error logs are kept.
- B. the operator has permission to proceed.
- C. the client thinks the operator knows what they are doing.
- D. both the operator and the client have the same understanding of what the client said.

**Question 11**

Roger has set up a home network for his family of four. Each person independently uses a streaming service that requires 8256 kbps.

When purchasing his broadband plan, what is the minimum option that Roger will require?

- A. 12 Mbps
- B. 25 Mbps
- C. 50 Mbps
- D. 100 Mbps

**Question 12**

In which one of the following situations would a batch transaction be suitable?

- A. a police officer spying on a criminal during a siege
- B. cyber currency investors tracking, buying and selling online currencies
- C. a server collecting infringement photos and data from speed cameras across a city
- D. a doctor in Alice Springs receiving heart data and adjusting a pacemaker for a patient visiting a clinic in the local community

**Question 13**

Bill, a Help Desk Operator, is unclear about exactly how to proceed with a client's query.

Which one of the following is the best response to give the client?

- A. 'We are really busy right now. Can you call back later?'
- B. 'I don't know how to answer that. Can you ring someone else?'
- C. 'I don't know the answer to that. I will have to ask someone else.'
- D. 'Let me look into it and I will get back to you within 45 minutes with a solution.'

**Question 14**

ServiceDog Australia provides guide dogs for visually impaired people throughout Australia. Visually impaired people are employed throughout the organisation.

The visually impaired employees use computer packages that include accounting software, human resources software, databases for dog training and databases for the allocation of dogs to clients.

When creating user documentation for these software packages, the most applicable industry standard requirement is that

- A. instructions contain pictures.
- B. instructions are also available as audio files.
- C. documents must contain an index at the end.
- D. user documentation be stored only at the Help Desk.

**Question 15**

A client is going to meet with their Help Desk Operator about their laptop not connecting to the client's wi-fi. The client informs the Help Desk that the problem has already occurred three times.

What should the Help Desk Operator do to prepare for this meeting?

- A. Reinstall the OS.
- B. Check the Help Desk log.
- C. Reschedule the meeting.
- D. Organise for a mediator to attend the meeting.

**Question 16**

The safest way to clean and remove dust from the interior of a computer is to earth the computer and then

- A. use low-pressure compressed air to blow out the dust.
- B. use the brush tool of a vacuum cleaner with minimal suction.
- C. use the crevice tool of a vacuum cleaner with minimal suction.
- D. also earth a small hand brush that can be used to collect the dust.

**Question 17**

Chelsea rings the Help Desk and says that she cannot print to the printer in her office.

Which of the following would be the most appropriate sequence of actions for the Help Desk Operator to take?

- A. Stay on the phone.  
Check the network connection between computer, printer and servers.  
Restart the printer.  
Email Chelsea the results of the investigation, and provide advice and support.
- B. Hang up the phone.  
Check the network connection between computer, printer and servers.  
Restart the printer.  
Email Chelsea the results of the investigation, and provide advice and support.
- C. Stay on the phone.  
Restart the printer.  
Check the network connection between computer, printer and servers.  
Email Chelsea the results of the investigation, and provide advice and support.
- D. Hang up the phone.  
Restart the printer.  
Check the network connection between computer, printer and servers.  
Email Chelsea the results of the investigation, and provide advice and support.

**Question 18**

Which one of the following lists **best** describes an appropriate set of conditions for a service-level agreement (SLA)?

- A.** type of service to be provided  
repercussions of the service provider not meeting its commitments  
response time and issue resolution time  
the service's desired performance level, especially its reliability and responsiveness  
hourly rate for technician providing service-level reporting  
steps for reporting an issue with the service
- B.** type of service to be provided  
response time and issue resolution time  
the service's desired performance level, especially its reliability and responsiveness  
monitoring process and service-level reporting  
repercussions of the service provider not meeting its commitments  
steps for reporting an issue with the service
- C.** type of service to be provided  
hourly rate for technician providing service-level reporting  
steps for reporting an issue with the service  
the service's desired performance level, especially its reliability and responsiveness  
registered log of technician's qualifications  
repercussions of service provider not meeting its commitments
- D.** type of service to be provided  
monitoring process and service-level reporting  
response time and issue resolution time  
the service's desired performance level, especially its reliability and responsiveness  
registered log of technician's qualifications  
steps for reporting an issue with the service

**Question 19**

Euphemia was unable to connect to the Australian Bureau of Meteorology's website, <www.bom.gov.au>. She then completed the following troubleshooting tests.

Test	Result
Ping the loopback address.	success
Ping the gateway address.	success
Ping vcaa.vic.edu.au.	failed – cannot be found
Ping an internet IP address 203.12.63.98.	success

Euphemia's tests indicate that the problem is caused by

- A. the DNS not working on the LAN.
- B. the router/modem not working.
- C. the DHCP not working on the LAN.
- D. broken wires in the network cable.

**Question 20**

Which one of the following lists contains suitable IPv4 addresses for computers that are all on the same LAN?

- A. 192.168.002.116  
192.168.002.009  
192.168.002.188  
192.168.002.117  
192.168.002.207
- B. 192.168.005.115  
192.168.005.277  
192.168.002.222  
192.168.005.051  
192.168.003.001
- C. 192.168.002.051  
192.168.002.203  
192.168.002.007  
192.168.002.263  
192.168.002.111
- D. 010.000.053.301  
010.000.053.200  
010.000.053.144  
010.000.053.017  
010.000.053.077

**SECTION B – Short-answer questions**

**Instructions for Section B**  
Answer **all** questions in the spaces provided.

**Question 1** (1 mark)

Technical documentation is a type of user documentation.

Describe a purpose of technical documentation.

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**Question 2** (3 marks)

Describe how the results of an investigation into a client support issue may be communicated to clients.

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**Question 3** (2 marks)

Lisa provides ICT support for an accounting business that has just had a new internal email program installed. She has produced online user documentation, offered one-on-one training and provided an email address where users can log issues that they may have with the new program.

Give one advantage and one disadvantage of one-on-one training.

Advantage \_\_\_\_\_

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Disadvantage \_\_\_\_\_

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**Question 4** (2 marks)

A student tries to log in to the school's computer network and receives a message indicating that there is no server available to authenticate their login at this time.

Suggest two possible causes for this error message.

1. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Question 5** (2 marks)

Smart-home voice assistants are a technology growing in popularity. The technology is able to interact with doors fitted with smart locks and the household network, among other things.

- a.** Identify an issue with the misuse of smart-home voice assistants. 1 mark

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\_\_\_\_\_

- b.** Suggest a solution to the issue identified in **part a.** 1 mark

\_\_\_\_\_

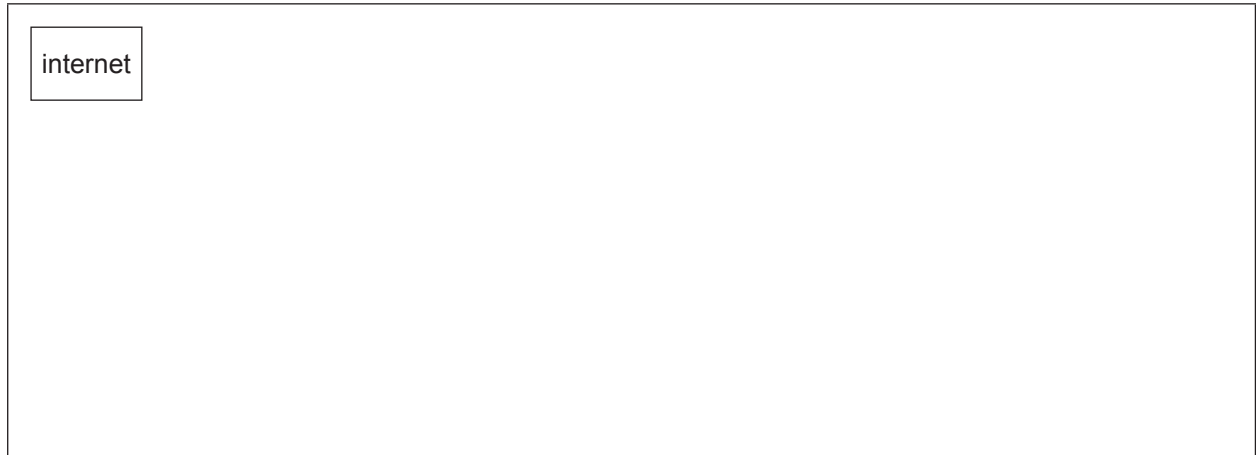
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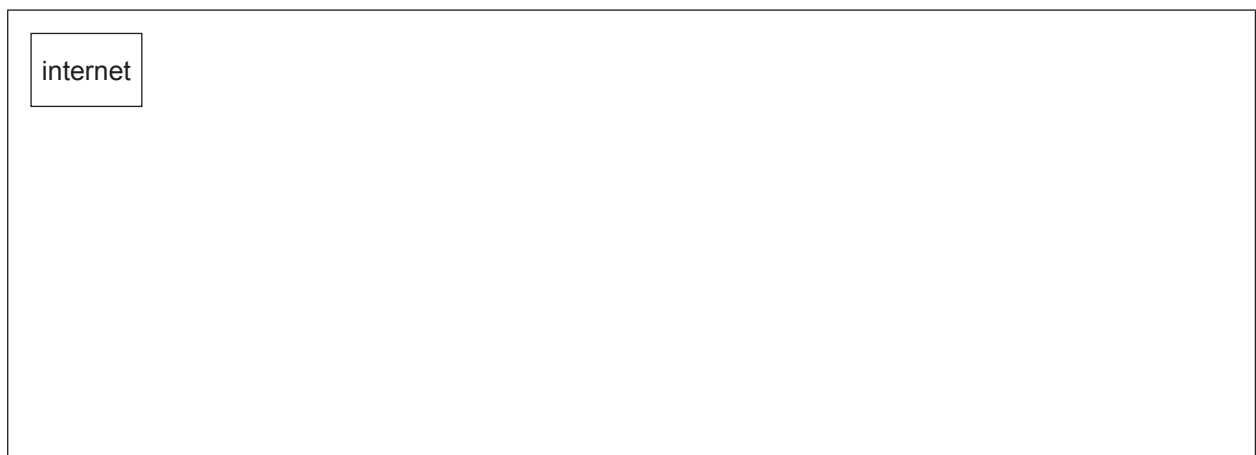
**Question 6** (2 marks)

In the spaces provided below, draw a diagram to show the main components for each of the following types of small office home office (SOHO) networks.

- Standard wired network that connects to the internet using the following components: switch, computer, firewall, router, printer



- Standard wi-fi network that connects to the internet using the following components: WAP, laptop, firewall, router, printer



**Question 7** (2 marks)

John has decided to upgrade his home office internet connection to the National Broadband Network (NBN). He has purchased a wireless router so he can connect to the internet. The salesperson told John that he has to set up the wireless encryption when he gets home.

What is the **best** wireless encryption for John to use in his situation? Justify your response.

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**Question 8** (6 marks)

Describe two features of each of the following basic functions of an OS.

- File system

1. \_\_\_\_\_

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2. \_\_\_\_\_

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- Memory management

1. \_\_\_\_\_

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2. \_\_\_\_\_

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- Process scheduling

1. \_\_\_\_\_

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2. \_\_\_\_\_

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**Question 9** (6 marks)

A local early learning centre has just introduced electronic term reports for each student and the local branch of the Department of Education has suggested that the early learning centre will need to increase security for its servers.

In the table below, recommend equipment or a procedure that could be used to address each issue listed and provide a reason for your recommendation.

Issue	Equipment or procedure	Reason
data loss as a result of a fire in the server room		
unauthorised users trying to modify electronic term reports		
electronic term reports accidentally deleted by an authorised user		

**Question 10** (2 marks)

Venue Warden has installed five electronic gates that allow members access, via a swipe card, to different parts of the Wet Water Swimming Complex. Other patrons can buy a day pass.

The swimming complex is busy with customers all day. The local swimming squad trains from 4.00 am to 6.00 am daily. During the day there are school groups and casual customers. From 5.00 pm to 7.00 pm, the swimming squad returns for more training.

- a. One evening, the swimming squad arrives for training and the gates do not open because of a flat battery.

Suggest a form of technical support for the Wet Water Swimming Complex that would be helpful in this situation.

1 mark

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- b. Who does Venue Warden need to obtain approval from to perform monthly maintenance?

1 mark

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**Question 11** (2 marks)

Lucy, a new Help Desk staff member, provided the following advice to a client: 'Sorry, you've lost your data but the boot sector was corrupted so we had to reformat the HDD and reinstall the OS.'

Convert Lucy's advice to jargon-free advice for the client.

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**Question 12** (2 marks)

A fuel and food business has purchased two sites that are 80 m apart and situated on either side of a dual-lane freeway. When checking the cost of an internet plan for each site, it was discovered that it would be significantly cheaper to purchase one internet plan that would cover the connection for both sites than to purchase an individual internet plan for each site.

	<b>Two individual internet plans</b>	<b>One internet plan for both sites</b>
<b>Connection cost</b>	$2 \times \$200 = \$400$	\$200
<b>Monthly cost</b>	$2 \times \$100 = \$200$	\$150
<b>Monthly data included</b>	$2 \times 1000 \text{ GB} = 2000 \text{ GB}$	2500 GB

There are no physical obstacles between the two sites apart from the traffic on the freeway. However, government authorities will not permit the business to install its own wires or cables across or under the freeway.

- a.** Suggest an alternative way to connect the LANs of the two sites. 1 mark

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- b.** There is potential for the traffic on the freeway to pose a problem to the internet connection for the two sites.  
Suggest how this potential problem could be addressed. 1 mark

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**Question 13** (8 marks)

The Help Desk Manager has asked Jane to review the feedback forms about solutions to login problems. The feedback forms currently contain only open-ended responses.

- a. Explain how it is difficult to summarise open-ended responses. 2 marks

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- b. Design a better online feedback form for clients by adding Boolean responses, drop-down boxes and appropriate control buttons to respond to solutions provided by the Help Desk for login problems. 6 marks

**Question 14** (3 marks)

After giving draft user documentation to two users, Tien and Sevag, for review, Bridget received the following feedback.

USER: Tien  
Comments:  
• don't like the use of yellow background  
• picture resolution is too low

USER: Sevag  
Comments:  
• add an index  
• use a sans serif font

**a.** Select any two of the comments above and give reasons why each might be a problem for users. 2 marks

1. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**b.** Select **one** of the comments from **part a.** Explain why Bridget may not act on this comment. 1 mark

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

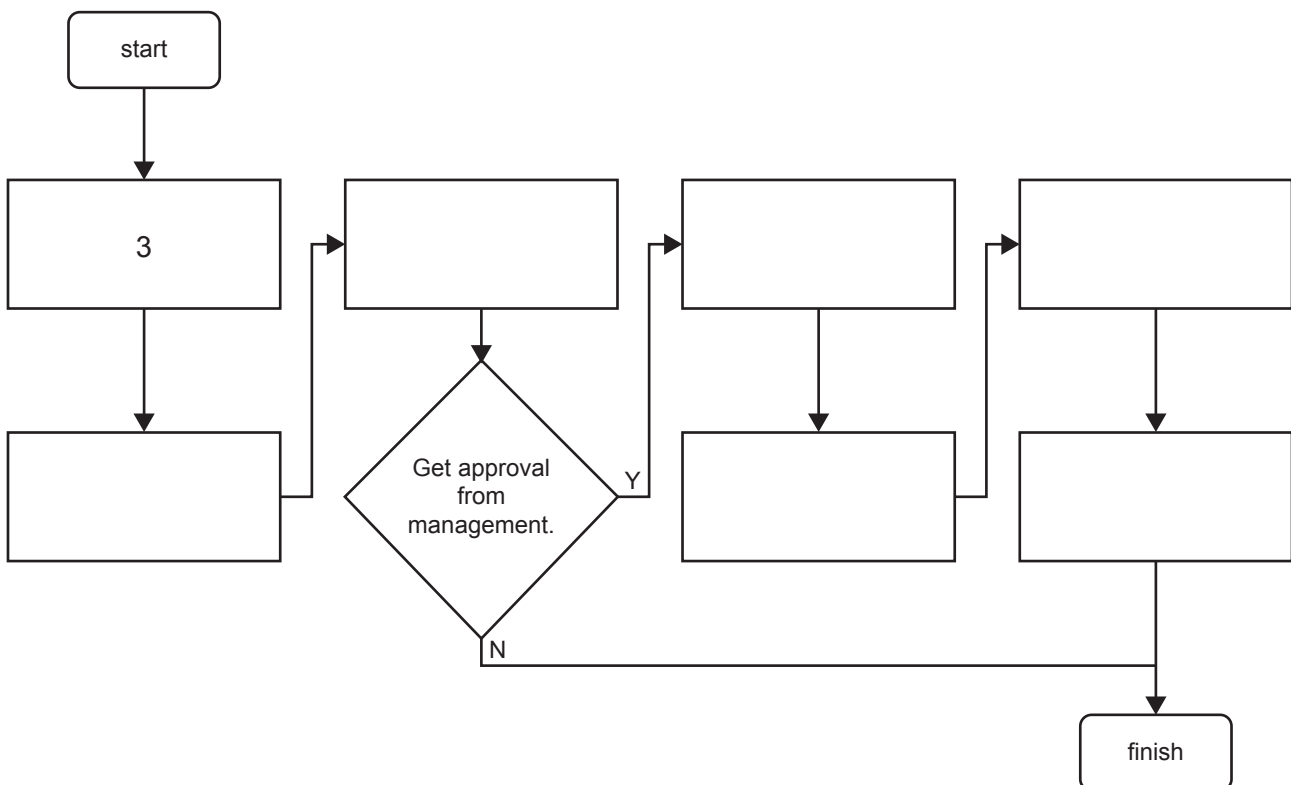


**Question 15** (4 marks)

Len Spokes is the ICT manager for a firm of chartered accountants. The firm has been notified that an upgrade is available for its major accounting software package. The items listed in the following table need to be addressed by Len and his team before the upgrade process is concluded.

Item number	Item
1	Evaluate the upgrade process.
2	Schedule the date and organise the required resources for the upgrade.
3	Receive notification that an upgrade is available.
4	Carry out the upgrade.
5	Assess the impact of the upgrade on the firm and plan the timing of the upgrade to minimise the impact.
6	Check the compatibility of the new software version with other integrated systems.
7	Notify staff of the upgrade.

Write the number of each item in the correct location on the flow chart provided below. Note: Item number 3 has already been placed in the flow chart as an example.



**Question 16** (5 marks)

Ransomware has had an impact on all OSs in the last few years. For example, WannaCry was a prominent ransomware attack that occurred in 2017.

- a. Describe the two main features of a ransomware attack. 2 marks

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- b. What are **two** preventative measures that a business could put in place to minimise the possibility of a ransomware attack succeeding? 2 marks

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- c. If a ransomware attack does succeed, what can a business do to minimise the impact of the attack? 1 mark

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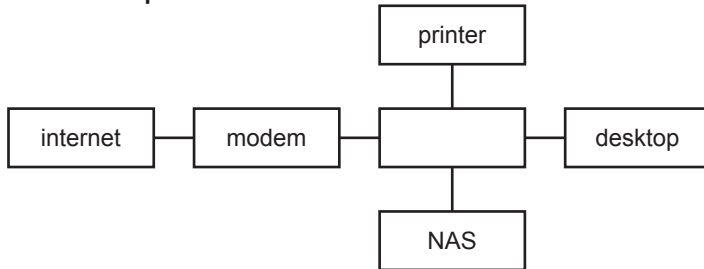
**Question 17** (3 marks)

Jan is working on two network maps. There are two components to add. One network map needs a hub and the other network map needs a switch.

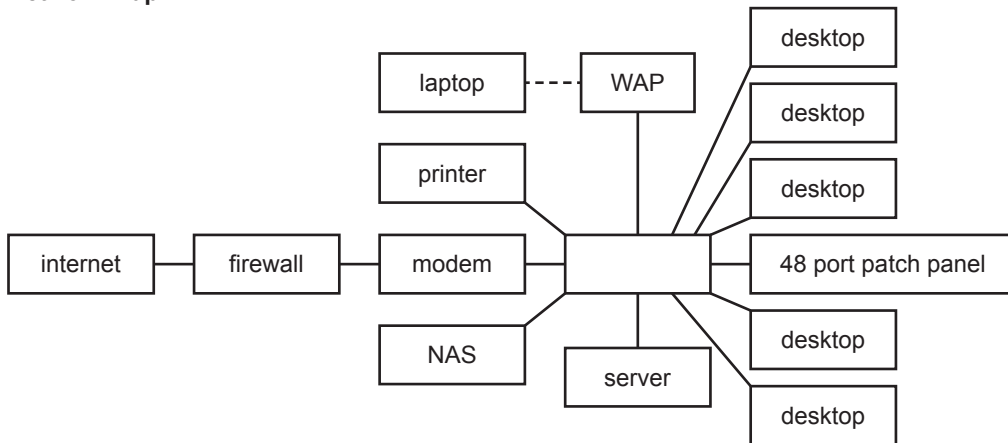
- a. Complete the network maps below by placing either a hub or a switch in the blank boxes provided.

1 mark

**Network map 1**



**Network map 2**



- b. Explain the reasoning behind your responses to **part a**.

2 marks

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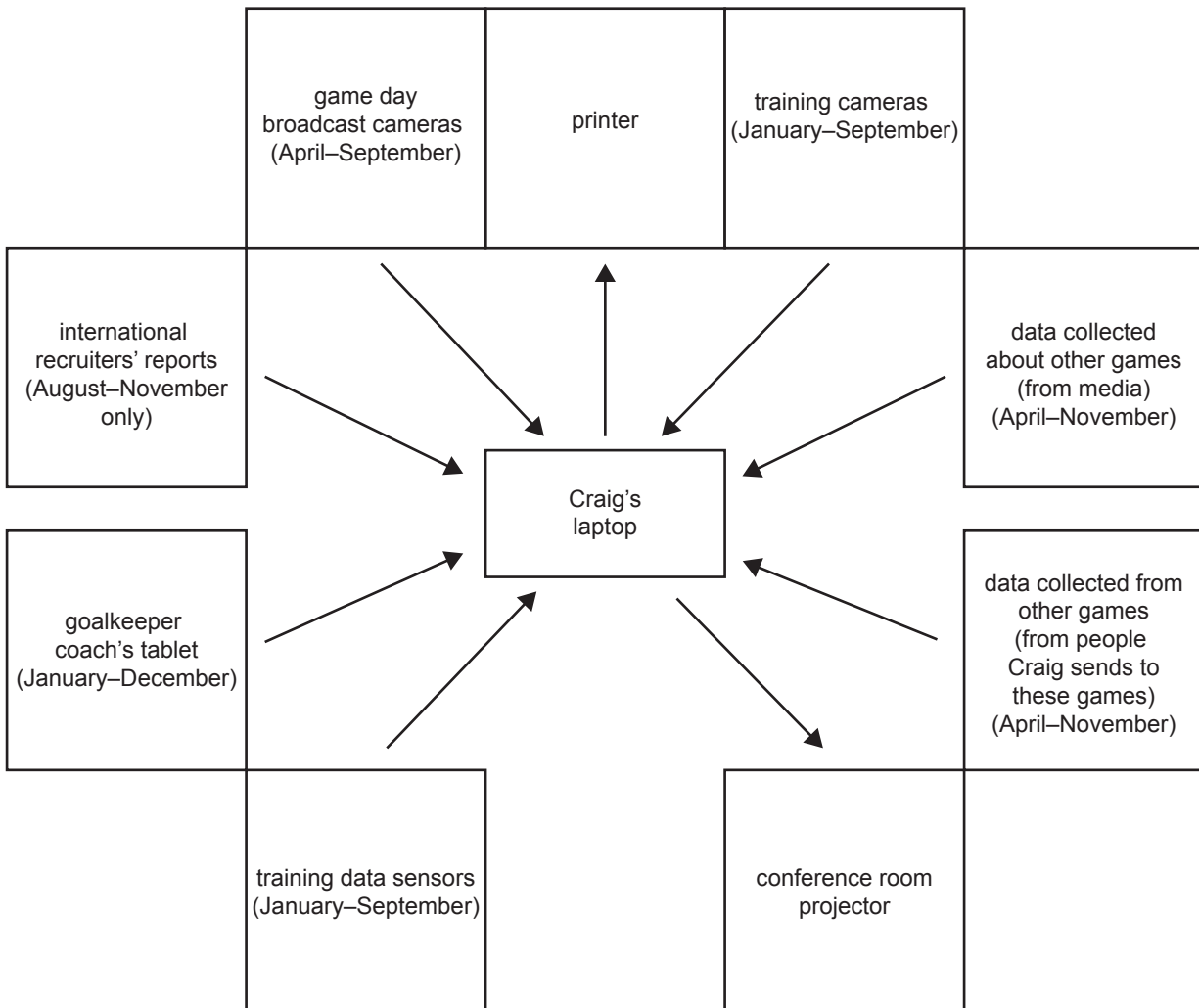
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**Question 18** (3 marks)

Craig is the coach of the Skylander Soccer Club. The sources of data input and data output for Craig’s laptop are shown in the diagram below.



Clare is to install a new OS for Craig’s laptop.

- a. Recommend what time of year would be best for Clare to install the OS in order to cause the least disruption. 1 mark

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- b. Suggest two methods that Clare could use to evaluate the installation of the OS. 2 marks

1. \_\_\_\_\_

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2. \_\_\_\_\_

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**Question 19** (7 marks)

BugSpray is an intelligent new antivirus software that learns to identify potential threats by comparing software usage with regular behaviour. It is designed to protect large multi-user computer systems that have a significant amount of data traffic every day.

The installation of BugSpray is very detailed. Careful installation is required, otherwise programs that are specific to the organisation may be identified incorrectly as viruses. Once installed the program is very simple to use.

**a.** Jack is responsible for writing the documentation for the installation of BugSpray.

**i.** Who should the installation software documentation target?

1 mark

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**ii.** What assumptions can Jack make about the people installing the software?

2 marks

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**b.** Jack will also be producing the user documentation for users who will be operating BugSpray once it is installed.

What are two differences between the documentation for installing the software and the documentation for using the software?

2 marks

1. \_\_\_\_\_

2. \_\_\_\_\_

**c.** Where should the documentation from **part a.** and **part b.** be placed to provide client access?

2 marks

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**Question 20** (5 marks)

A local library is going to put radiofrequency identification (RFID) chips in its books and on borrowers' membership cards. The recording of books being borrowed and returned will be done automatically. Books are to be borrowed as the borrowers leave the library. Books are to be returned through a book chute in an external wall or via an internal book chute leading to the book processing area.

Suggest five different types of hardware and/or software products that will need to be added to the library's network for this borrowing and returning system to be operational. Explain your suggestions.

1. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_