

STUDENT NUMBER           Letter

# VCE VET INFORMATION, DIGITAL MEDIA AND TECHNOLOGY

## Written examination

Thursday 11 November 2021

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	18	18	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 19 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 is the most secure form of wireless security?

- A. WPS
- B. WEP
- C. WPA
- D. WPA2

**Question 2**

The unique identifier in a NIC's firmware is the

- A. IP address.
- B. CMD frame.
- C. MAC address.
- D. TCP/IP frame.

**Question 3**

Which one of the following lists of components is ordered from quickest to slowest?

- A. RAM, CPU cache, SSD, HDD
- B. SSD, HDD, RAM, CPU cache
- C. CPU cache, RAM, SSD, HDD
- D. CPU cache, SSD, RAM, HDD

**Question 4**

Which one of the following devices will have its life span reduced if it is defragmented?

- A. SSD
- B. HDD
- C. DVD
- D. RAM

**Question 5**

John has added a NAS to his network to store his favourite movies and recorded sporting events. A file can be in excess of 10 TB.

Which one of the following file systems should John use on the NAS?

- A. UDF
- B. Joliet
- C. NTFS
- D. FAT32

**Question 6**

When diagnosing and repairing faults, which one of the following would be completed last?

- A. assessing the existing problem
- B. testing the suspected faulty equipment
- C. planning to do the repair with minimum disruption to clients
- D. obtaining all the necessary components and completing the task

**Question 7**

Wyltons Saddle School replaced all its printers during the summer holidays. The school's ICT support staff are now preparing for the arrival of staff and students for the new school year.

Which one of the following printing issues is most likely to occur on the first day of school?

- A. printers out of toner
- B. printers not working
- C. forgotten login password
- D. wireless mouse not working

**Question 8**

Jerry lives on a large block of land that has a house and a shed. He is setting up a gaming centre in the shed. A switch in the shed is 85 m from the internet connection in the house. Jerry's favourite gaming website requires a connection speed of 280 Mbps.

To connect the shed to the house, which one of the following is the most cost-effective cable?

- A. fibre
- B. CAT 5
- C. CAT 6
- D. CAT 5e

**Question 9**

Which one of the following tasks should be completed before creating user documentation for a software app?

- A. Walk through and review the app.
- B. Create a training schedule for staff.
- C. Seek permission from the app's licensee.
- D. Choose the people who will evaluate the user documentation.

**Question 10**

Which one of the following is a benefit of having a wireless printer in a small office?

- A. Only one device can connect to the printer.
- B. There is no need to have network cabling to the printer.
- C. No technical knowledge is required to set up the printer.
- D. It is cheaper to operate as there is no need for a LAN cable.

**Question 11**

Which one of the following maintenance tasks is appropriate for local ICT staff to complete?

- A. Install new graphics cards in desktop computers.
- B. Replace a blown fuse in a computer's power supply.
- C. Authorise the purchase of a new colour laser printer.
- D. Replace the screen on a photocopier that has an SLA.

**Question 12**

Greg works as an ICT Help Desk technician at Lucas High School. He has been asked by the principal to provide some advice to the Art department, which wants to purchase a large, networked 3D printer.

What is the first task that Greg should complete when investigating the request for the 3D printer?

- A. Actively listen to what the Art department requires.
- B. Ask the principal how much money is in the hardware budget.
- C. Ring the local primary school to find out what 3D printers it has.
- D. Research 3D printers that are currently available so he can recommend the best one.

**Question 13**

A new information storage system has been implemented at a dinosaur museum to meet new government regulations.

Which one of the following is the best way to help the museum's 12 non-ICT staff correctly use the new system?

- A. Provide an FAQ document to all staff.
- B. Organise one-on-one information and training sessions run onsite by local ICT staff.
- C. Set up a rewards and penalties system for those who do and do not use the system correctly.
- D. Schedule an offsite staff meeting with experts who will explain the new system and how it operates.

**Question 14**

Tara, an ICT sales consultant, has recommended to a customer that she install a new OS on the customer's network computers. The customer is concerned that the new OS might stop some existing programs from working.

To satisfy the customer's concerns, Tara should

- A. install the new OS when the company is not busy.
- B. ensure she receives payment before conducting the installation.
- C. install the OS as a batch system so any problems can be reversed.
- D. conduct a review of the customer's software and check for compatibility with the new OS.

**Question 15**

Jill, a teacher, has come in to work on the Sunday before a new school term starts. She tries to plug her laptop into the ceiling-mounted data projector and notices that there is now no VGA cable. She remembers an email about an upgrade to the data projectors that involved installing wi-fi access.

Jill needs to test the slide presentations that she created over the holidays. She has the mobile number of David, an ICT Help Desk staff member who has helped her before.

What advice should David give Jill?

- A. Go out and buy a new VGA cable.
- B. Ring the principal to ask what she should do.
- C. Do not do anything and hope everything works when needed.
- D. Bring her computer to the ICT Help Desk first thing Monday morning.

**Question 16**

A standard for creating user documentation states that documentation is independent of the software tools that may be used to produce documentation, and applies to both printed documentation and on-screen documentation.

This standard is important in order to ensure

- A. formatting for software and hardware instructions is different.
- B. there is a distinction between online and printed user documentation.
- C. people using different software can expect similar headings and sections.
- D. a person who knows how to use one particular software can quickly learn to use another.

**Question 17**

A national organisation wants to update its website to assist its employees with using a new program to request leave.

The most suitable form of user documentation would be a

- A. table of contents.
- B. quick start guide.
- C. technical manual.
- D. troubleshooter guide.

**Question 18**

Intrusion detection systems can be an important tool to secure a LAN.

Which one of the following is the best location in a LAN for an intrusion detection system?

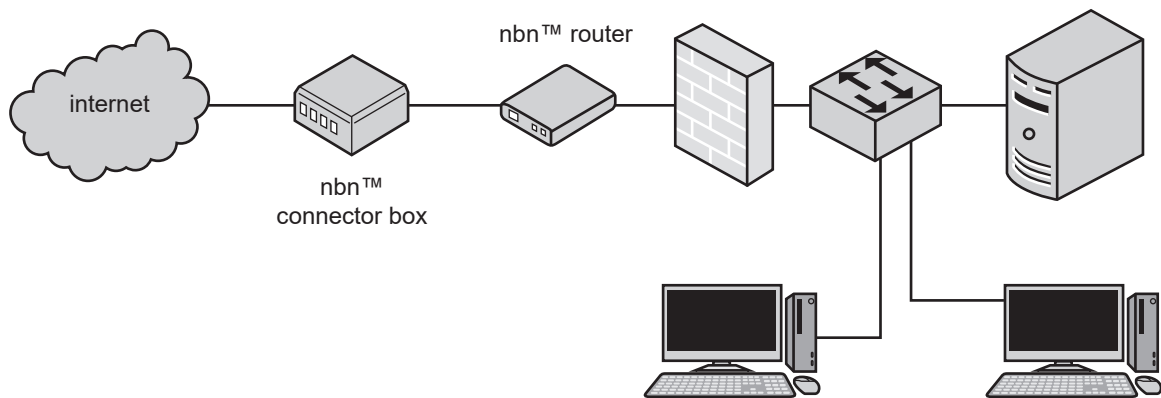
- A. on the main server in the LAN
- B. between the main firewall and the LAN
- C. between the main firewall and the internet
- D. on the workstation in the LAN, used by the ICT technician

**Question 19**

An ICT Help Desk keeps a log of client problems and how each problem was resolved.

These problems are sorted into categories in order to ensure

- A. similar problems can be grouped together.
- B. a detailed tally of daily problems can be kept.
- C. hardware and software issues are grouped together.
- D. new staff can immediately find out how to record a case.

**Question 20**

A small office network connects to the internet via the National Broadband Network (nbn™), as shown in the diagram above. One morning, no computers on the network could access the internet. When the network connection on one of the computers was checked, the network cable was found plugged in and the nbn™ router indicator light was on.

Which one of the following is the most likely cause of the issue?

- A. The nbn™ router has no power.
- B. The computer's OS has not been updated recently.
- C. The cable from the switch to the nbn™ router is not plugged in.
- D. The cable from the nbn™ router to the connector box is a CAT 5.

**SECTION B – Short-answer questions****Instructions for Section B**

Answer **all** questions in the spaces provided.

**Question 1** (2 marks)

A small business provides ICT support to five schools in the Mallee river basin.

List **two** pieces of information that the business should record before a support job can be closed.

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**Question 2** (2 marks)

Describe a static IP address and provide **one** example of its use.

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**Question 3** (3 marks)

Rosy runs the ICT Help Desk for a number of small businesses that sell products through online stores. Jasper, who runs one of the online stores, has contacted Rosy to say that he has received complaints from some of his customers. These customers said they have placed orders, but Jasper has not received their orders.

Rosy and Jasper have agreed to an online video conference.

Write three questions that Rosy could ask Jasper that will help resolve the problem.

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

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

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

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**Question 4 (5 marks)**

Firmware is a component of many ICT devices.

- a. Identify **one** device that uses firmware. 1 mark

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- b. Describe firmware and the function it performs. 2 marks

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- c. Describe when firmware may need to be updated and how it should be updated. 2 marks

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**Question 5 (3 marks)**

Explain each of the following terms.

Closed source \_\_\_\_\_

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Open source \_\_\_\_\_

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Freeware \_\_\_\_\_

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**Question 6 (3 marks)**

An OS requires a driver for each hardware component.

- a. What is a driver and why is it needed for each hardware component? 2 marks

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- b. List **one** possible source for a driver update. 1 mark

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**Question 7 (4 marks)**

Some security experts recommend the use of a password manager.

List two advantages and two disadvantages of a password manager.

Advantage 1 \_\_\_\_\_

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Advantage 2 \_\_\_\_\_

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Disadvantage 1 \_\_\_\_\_

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Disadvantage 2 \_\_\_\_\_

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**Question 8** (3 marks)

a. Give **two** reasons why it is important to obtain feedback from a client.

2 marks

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b. Describe **one** method of obtaining feedback.

1 mark

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**Question 9** (6 marks)

Rafferty and Harley have developed an app that allows people on holiday to feed and monitor their cats remotely. Clients can leave a message through the app at any time, seven days a week.

One day, on arrival at work at 9 am, Rafferty and Harley found a very long list of 5000 messages. Below are the first 10 items in the app log.

Time	Name	Contact	Issue
19:00	Tarwin	tarwin@em###.com	Couldn't log in
19:05	Edwina	catlover@ed###.com.au	Logged in but video frozen
19:15	Shirley	fluffy@fur###.net.au	Can't see poor Fluffy. Is he OK?
19:15	Ari	mysterycat@fe###.com.au	Video not working
19:20	Catnip	a0011??23405@ya###.com	UNIQUE BUSINESS OPPORTUNITY
19:25	Andreas	andreas64@em###.com	Video is not of my cat
19:25	Zhen	hu@fur###.cn	I seem to have logged in to someone else's cat. Also, possums.
19:30	Linus	linus@fur###.com	Wrong video
19:35	Emily	em@h###.com.au	Something wrong with video. Not my house or cat.
19:35	Arkhan	cats@fur###.com.au	This does not look like my cat. Either the video colour is wrong or it's the wrong video.

Rafferty immediately reboots the system, which appears to solve the problem. Harley begins to contact the 5000 clients who messaged overnight.

- a. How should Harley contact the clients? 1 mark

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- b. Suggest **two** things that Harley should mention when contacting the clients about this problem. 2 marks

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- c. Describe **three** pieces of information that Rafferty should document about the problem. 3 marks

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**Question 10** (4 marks)

Liz has recently set up a database administration business in her home. She offers her database skills to a number of large businesses in her local area.

One of the businesses has raised concerns about the security of its data in Liz’s home office. Liz has not really thought too much about the need for security, but realises that if she would like to continue to work with these large businesses she is going to need to set up and install a number of security controls.

Recommend one physical security control and one software security control that Liz could use, and provide a description of each.

Physical security control \_\_\_\_\_

Description \_\_\_\_\_

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Software security control \_\_\_\_\_

Description \_\_\_\_\_

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**Question 11** (3 marks)

Zeina has developed a program for hospitals and rehabilitation centres, which allows people with reduced mobility to virtually experience camping and hiking. The program is designed to operate on the Heceta OS, which is commonly used in the healthcare industry.

- a. Suggest how Zeina could optimise the OS to suit people with reduced mobility. 1 mark

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- b. A virtual reality experience is likely to use considerable memory.  
Outline how an OS manages high memory demands. 2 marks

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**Question 12** (3 marks)

Central Primary School has classes from prep to Year 6. The school has a large number of new migrant children coming from diverse backgrounds. The school has identified 132 different languages being used by these children's families as a first language.

Adriana, the school librarian, has registered the school in an online library called ReadMe, where students can listen to audiobooks. The installation of the ReadMe app is complicated but, once installed, the app is easy to use. All students have access to a device at home that they can use.

Adriana wants to create an online video with instructions on how to install the app.

- a. List **two** factors that Adriana needs to consider about her audience. 2 marks

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- b. Suggest **one** method that Adriana can use to test the suitability of her online video. 1 mark

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**Question 13** (4 marks)

- a. Explain **two** differences between CAT 6 and CAT 7 cables. 2 marks

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- b. Select **one** of the following small businesses by ticking (✓) the appropriate box:

- small accounting firm  
 video editing business

Recommend and justify using **either** CAT 6 **or** CAT 7 cables in your selected small business. 2 marks

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**Question 14** (5 marks)

Mardi is a computer technician at the local doctors’ surgery. The Practice Manager has asked her to refit the entire surgery with new desktop computers. Mardi has done some research and has identified an appropriate desktop computer. She has recommended this desktop computer to the Practice Manager for approval.

- a. Why does Mardi need to obtain approval from the Practice Manager? 1 mark

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- b. Mardi has obtained approval.  
List four tasks that Mardi should complete before implementing the refit of the surgery. 4 marks

Task 1 \_\_\_\_\_

Task 2 \_\_\_\_\_

Task 3 \_\_\_\_\_

Task 4 \_\_\_\_\_

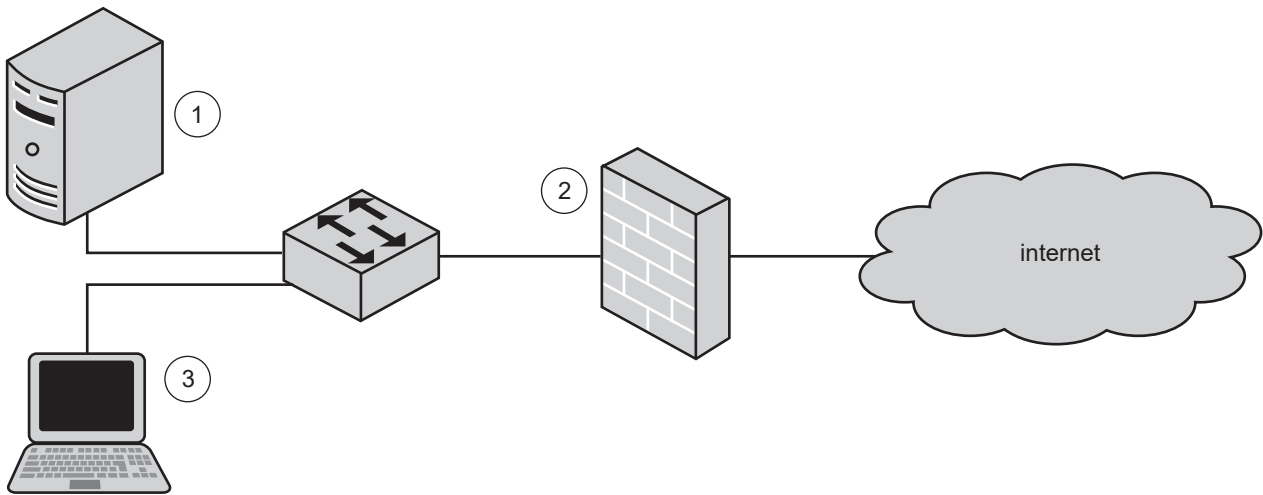
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**Question 15** (4 marks)

- a. Shown below are information obtained from a local computer and a numbered network diagram.

**Information from a local computer**

IPv4	192.168.0.106
subnet mask	255.255.255.0
DHCP server	192.168.0.251
DNS server	192.168.0.251
gateway	192.168.0.254



Complete Table 1 using the information and the diagram provided.

3 marks

**Table 1**

Component number	Name	Address
1		
2		
3		

- b. Provide an example of a command line instruction that would be used on a computer to obtain an address in Table 1.

1 mark

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**Question 16** (6 marks)

Ewen’s Supermarket is upgrading its computer system and network. The manager has hired Jing, a computer network specialist, to manage the project. The manager has requested that Jing create user documentation for a number of hardware and software components of the upgrade. These components include the new computers, new printers, new server, wi-fi, EFTPOS, upgrade to the National Broadband Network (nbn™), cabling and a network cabinet.

Select three components from the list provided, recommend an appropriate type of user documentation for each component and describe how each type of user documentation would be best suited to that component. You may use each type of user documentation only once.

Component 1 \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Component 2 \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

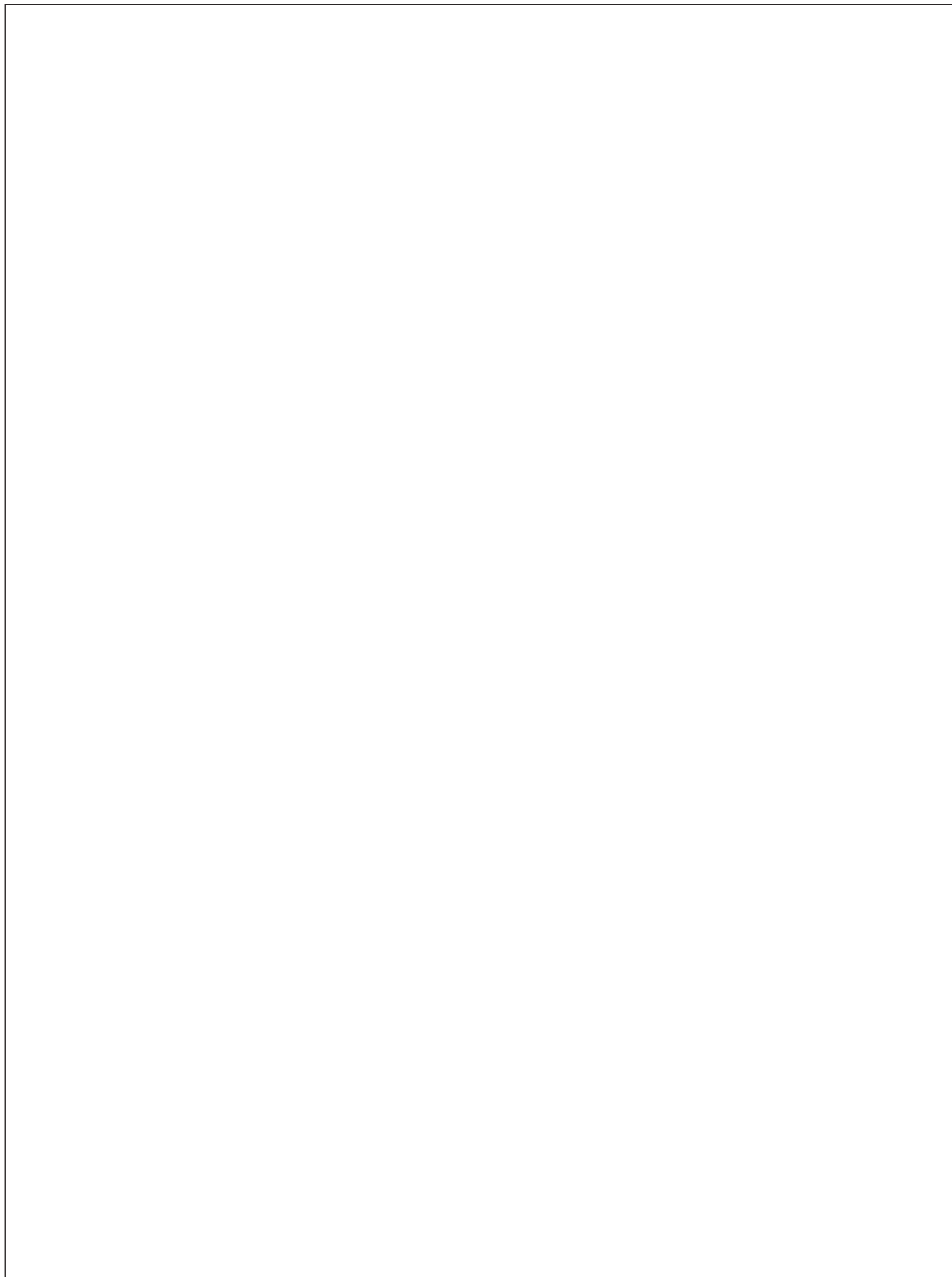
Component 3 \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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**Question 17** (4 marks)

In the space provided below, draw a diagram that shows how an ICT technician should sit when working at a computer station. Label the workplace health and safety (WHS) standards included in your diagram.



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**Question 18** (6 marks)

Megan runs a pizza restaurant. The restaurant is large (130 m × 40 m) and has three sections:

- kitchen and office (10 m × 40 m)
- indoor dining area (45 m × 40 m)
- outdoor dining area (75 m × 40 m)

Megan has written her own QR code app. When a client scans the QR code and provides their contact details, the information is stored on a computer in the office. Megan will send the client's contact details to the government if she is requested to do so.

Given the size of the restaurant, Megan has purchased a set of Bluetooth<sup>®</sup>-connected buzzers to inform her clients when their meals are ready.

On the diagram on page 19, design a network for the restaurant that takes into consideration the information above. Add and label appropriate components.

Entrance

outdoor dining area

indoor dining area

kitchen and office

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