

Information and Digital Technology

Networking and hardware

General Instructions

- Reading time – 5 minutes
- Working time – 2 hours
- Write using black pen
- Board-approved calculators may be used
- Write your Centre Number and Student Number at the top of pages 9, 11, 13 and 15

Total marks – 80

Section I Pages 2–8

20 marks

- Attempt Questions 1–20
- Allow about 20 minutes for this section

Section II Pages 9–15

30 marks

- Attempt Questions 21–26
- Allow about 50 minutes for this section

Section III Page 17

15 marks

- Attempt Question 27
- Allow about 25 minutes for this section

Section IV Page 18

15 marks

- Attempt Question 28
- Allow about 25 minutes for this section

Section I

20 marks

Attempt Questions 1–20

Allow about 20 minutes for this section

Use the multiple-choice answer sheet for Questions 1–20.

- 1 Which of the following is permitted under the licence of an open-source operating system software?
- (A) Sell the software
 - (B) Download the software for free
 - (C) Change the name of the software
 - (D) Place a copyright on the software
- 2 The minimum wages and conditions an employee is entitled to in Australia are set out in
- (A) agreements.
 - (B) arrangements.
 - (C) awards.
 - (D) contracts.
- 3 The diagram represents the results of running a diagnostic utility before and after performing a process on a hard drive.

B = Bad block

B				B	B														
						B	B												B
																		B	B

Before the process

B = Bad block

B	B	B	B	B	B	B	B	B											

After the process

Which of the following processes has been performed on the hard drive?

- (A) File sharing
- (B) Optimisation
- (C) System backup
- (D) File compression

- 4 What type of document would be most likely to contain the following statement?
‘An employee must not share the personal information of another employee with co-workers or the public.’
- (A) Code of conduct
 - (B) Employee role statement
 - (C) Work health and safety policy
 - (D) Equal employment opportunity policy
- 5 A company carries out a full backup on Tuesday and Friday nights and a differential backup on Monday, Wednesday, Thursday, Saturday and Sunday nights. On Monday morning, the file server failed and caused all files to be destroyed.
- Which of the following is the best way to recover the files?
- (A) Restore the full backup from Friday
 - (B) Restore Friday’s full backup and Sunday’s differential backup
 - (C) Restore Friday’s full backup and Monday’s differential backup
 - (D) Restore Friday’s full backup and both Saturday’s and Sunday’s differential backups
- 6 One example of a human cost of a workplace injury is loss of
- (A) staff.
 - (B) profit.
 - (C) output.
 - (D) morale.

- 7 The image shows a floor channel cable cover placed over a power cable.



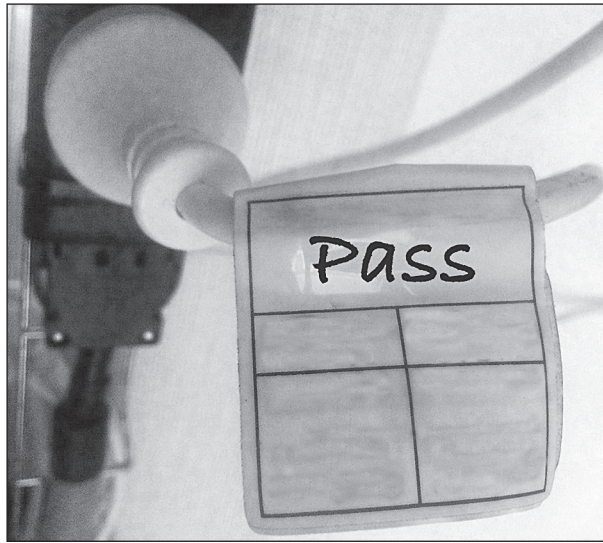
What is the main purpose of the floor channel cable cover?

- (A) To hide the cable
 - (B) To create a footrest
 - (C) To prevent a power surge
 - (D) To reduce the risk of tripping
- 8 Kim receives an email claiming that her credit card account is about to be suspended unless she emails her credit card details and personal identification number (PIN) immediately.

What is this an example of?

- (A) Phishing
- (B) Scanning
- (C) Debugging
- (D) Virus signing

- 9 The image shows a testing tag attached to a power cable.






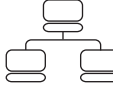
According to the Australian standard, what other critical information must be included on the tag?

- (A) Date tested, retesting date, technician ID, testing company name
 - (B) Location of test, retesting date, technician ID, testing company name
 - (C) Date tested, technician ID, type of cable, testing company licence number
 - (D) Location of test, retesting date, type of cable, testing company licence number
- 10 Access to a document needs to be restricted to a small group of users.

Which of the following would be modified to achieve this?

- (A) Creations
- (B) Extensions
- (C) Permissions
- (D) File attributes

- 11** A wireless access point is not functioning correctly. Its indicators and their status are seen below.

Indicators				
Status	On	Off	On	On

Which is the most likely cause of the fault with the access point?

- (A) There is no power.
 - (B) The access point is unlocked.
 - (C) There is no connection to the network.
 - (D) The access point is not transmitting a wireless signal.
- 12** Which address setting on a network printer would be configured to allow printing from all network computers?
- (A) Static IP
 - (B) Dynamic IP
 - (C) Static proxy
 - (D) Automatic proxy
- 13** Which of the following identifies the public name of a wireless local area network?
- (A) MAC
 - (B) SOHO
 - (C) SSID
 - (D) WPA

- 14** When checking your account balance using internet banking, which of the following protocols is used?
- (A) DHCP
 - (B) HTTPS
 - (C) RTSP
 - (D) TCP
- 15** Which device minimises errors that may occur when sending a message over a local area network (LAN)?
- (A) Hub
 - (B) Switch
 - (C) Modem
 - (D) Network interface card
- 16** Which protocol is used for sending an email?
- (A) FTP
 - (B) IMAP
 - (C) POP
 - (D) SMTP
- 17** Which of the following is the best device to connect two networks that use different protocols?
- (A) Bridge
 - (B) Firewall
 - (C) Gateway
 - (D) Modem

18 The diagram shows the results of a diagnostic test.

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Connection-specific DNS Suffix      : testschool-h.net.sch.nsw.au
Link-local IPv6 Address . . . . . : fe80: :8345 :b723 : 9e19 : db09%13
IPv4 Address . . . . .             : 10.15.220.80
Subnet Mask . . . . .              : 255.255.254.0
Default Gateway . . . . .          : 10.15.219.1
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Which diagnostic test was used to produce these results?

- (A) Ipconfig
 - (B) Inetconfig
 - (C) Inetping
 - (D) Ping
- 19** What is the purpose of automatic proxy settings in a personal computer?
- (A) To allow a connection to the internet
 - (B) To allow a connection to a local area network
 - (C) To allow network requests to a third party for action
 - (D) To allow authentication without a username and password
- 20** Which of the following best describes data transfer using TCP/IP?
- (A) Transmitted in both directions all the time
 - (B) Transmitted in both directions after a connection is made
 - (C) Transmitted in one direction after connection is made by the sender
 - (D) Transmitted in one direction after connection is made by the receiver

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Centre Number

Section II

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Student Number

30 marks

Attempt Questions 21–26

Allow about 50 minutes for this section

Answer the questions in the spaces provided. These spaces provide guidance for the expected length of response.

Question 21 (6 marks)

- (a) What is meant by *recommended requirements* in reference to an operating system? **1**

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- (b) How do the power management settings of *hibernate* and *suspend* differ? **3**

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- (c) What is the difference between *batch* and *real-time* systems? **2**

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Centre Number

Section II (continued)

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Student Number

Question 22 (5 marks)

- (a) Identify TWO diagnostic functions that are performed by antivirus software. **2**

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- (b) Outline TWO tasks that should be included in a routine maintenance schedule. **3**

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Question 23 (4 marks)

Explain the benefits of effective teamwork. **4**

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Centre Number

Section II (continued)

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Student Number

Question 24 (8 marks)

- (a) Using an example, outline why motherboards have expansion slots. 2

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- (b) Why does the usable storage space on a magnetic hard drive differ from its physical size? 2

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- (c) Explain the advantages of using a separate graphic adapter card compared to an inbuilt graphics chip on the motherboard. 4

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Centre Number

Section II (continued)

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Student Number

Question 25 (3 marks)

Why is it important to document user support requests?

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Question 26 (4 marks)

A project team has just completed the installation of a new system and wants to obtain user feedback on the system.

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What are the advantages of using a survey compared to using interviews to obtain user feedback?

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Section III

15 marks

Attempt Question 27

Allow about 25 minutes for this section

Answer the question in a writing booklet. Extra writing booklets are available.

Question 27 (15 marks)

A business with five staff, one server, two desktops, and three laptops has moved into a new location and will need to set up a new network, with additional hardware to enable an internet connection.

- (a) Design and draw a labelled network diagram, including the components and connections for this business. Justify your choice of components. **7**
- (b) Describe how the new network can be protected against security intrusion. **8**

Please turn over

Section IV

15 marks

Attempt Question 28

Allow about 25 minutes for this section

Answer the question in a SEPARATE writing booklet. Extra writing booklets are available.

Your answer will be assessed on how well you:

- demonstrate knowledge and understanding relevant to the question
 - communicate ideas and information using relevant workplace examples and industry terminology
 - present a logical and cohesive response
-

Question 28 (15 marks)

A technology company is reviewing its risk management after several workplace injuries. A technician was struck by a box falling from a shelf while repairing a printer. A client slipped and fell on a wet floor when the floor was being cleaned. Most recently, a trainee suffered an electric shock while attempting to repair a computer.

Explain how risk management could be applied in this workplace to identify hazards, and to assess, control, monitor and review risks.

End of paper