General Instructions
• Reading time – 5 minutes
• Working time – 2 hours
• Write using black or blue pen
  Black pen is preferred
• Board-approved calculators may be used
• Write your Centre Number and Student Number at the top of pages 9, 11 and 13

Total marks – 80

Section I Pages 2–7
20 marks
• Attempt Questions 1–20
• Allow about 30 minutes for this section

Section II Pages 9–14
30 marks
• Attempt Questions 21–25
• Allow about 40 minutes for this section

Section III Page 15
15 marks
• Attempt Question 26
• Allow about 25 minutes for this section

Section IV Page 16
15 marks
• Attempt Question 27
• Allow about 25 minutes for this section
Section I

20 marks
Attempt Questions 1–20
Allow about 30 minutes for this section

Use the multiple-choice answer sheet for Questions 1–10.

1. Which of the following is managed by a computer’s operating system?
   (A) BIOS
   (B) CPU usage
   (C) Power supply
   (D) CMOS battery

2. Which of the following is an internal source of work health and safety (WHS) information in an ICT organisation?
   (A) Minutes of a compliance meeting
   (B) A hardware manufacturer’s manual
   (C) A WorkCover information document
   (D) An Australian Computer Society publication

3. Which of the following is the best method for safely removing a portable flash media device from a computer?
   (A) Pull the device out gently
   (B) Hibernate the computer then remove the device
   (C) Close any open windows then remove the device
   (D) Stop all related processes then remove the device
4 Read the following conversation.

CLIENT: Are you coming over to fix my printer?

TECHNICIAN: I’m busy at the moment. I’ll be there around three.

CLIENT: Three is okay.

TECHNICIAN: Cool, see you at three.

What type of feedback does the client give to the technician?

(A) Direct  
(B) Formal  
(C) Indirect  
(D) Negative

5 Which of the following is an example of diagnostic testing?

(A) Running a file search on a hard drive  
(B) Configuring partitions on a hard drive  
(C) Backing up a faulty hard drive to a new hard drive  
(D) Checking the number of bad blocks on a hard drive

6 What is a *virus signature*?

(A) The damage done by a computer virus  
(B) The code used to specifically identify a virus  
(C) The trail left behind after a virus infects a computer  
(D) The specific message the virus leaves on a computer

7 When should a risk assessment be adjusted?

(A) On a daily basis  
(B) As soon as a worker makes a complaint  
(C) Where there is evidence that a risk is no longer valid  
(D) When no injuries have been recorded recently against a risk
8 What is a purpose of equal employment opportunity (EEO) in the workplace?

(A) To ensure that all job interviews are recorded correctly
(B) To provide procedures for reducing bullying and intimidation
(C) To prohibit changes to conditions without consulting employees
(D) To ensure that people from minority groups are not disadvantaged

9 A DVD is inserted into a computer then the computer is restarted. The computer connects to the network and retrieves a task sequence to install an operating system image.

Which installation method is described above?

(A) Boot media installation with a recovery disk
(B) Recovery disk installation with a network image
(C) Network installation using boot media
(D) Install from an image using a network boot

10 What form of risk control is applied when a hazard is isolated?

(A) Administration
(B) Assessing
(C) Elimination
(D) Minimisation
11 A display device is functioning correctly but is not displaying an image.

Which of the following components is most likely to be the cause of the problem?

(A) Hard disk  
(B) Adapter card  
(C) Central processing unit (CPU)  
(D) Random access memory (RAM)

12 Which of the following is an advantage of online documentation over paper-based documentation?

(A) All users have access to it.  
(B) Users can find support while the internet is not working.  
(C) It is accurate when the software application is first released.  
(D) Changes can be easily made available to users for up-to-date support.

13 Which of the following protocols is the quickest for transferring large files over the internet?

(A) FTP  
(B) HTTP  
(C) SMTP  
(D) TCP/IP

14 How does half-duplex communication work?

(A) In one direction only  
(B) In both directions at the same time using one channel  
(C) In both directions but not at the same time  
(D) In both directions at the same time using two channels
A computer has been set up without a hard disk drive. It receives all of its services, including access to software applications, via a network.

What type of computer is this most likely to be?

(A) A tablet  
(B) A server  
(C) A thin client  
(D) A thick client

In which of the following are ALL the settings required for a networked computer to connect to the internet using a static IP address?

(A) Subnet mask, gateway, DNS  
(B) Subnet mask, port number, gateway  
(C) DNS, proxy address, DHCP settings  
(D) DHCP settings, proxy address, port number

What type of network is created by devices connecting via Bluetooth?

(A) Ad-hoc  
(B) Cellular  
(C) Wi-Fi  
(D) Workgroup

There is no internet activity due to a failure of a hardware device. However, all other local area network (LAN) functions still work.

Which device is most likely to have failed?

(A) NIC  
(B) Router  
(C) Switch  
(D) Access point
19. Which of the following combinations of configurations provides the most secure wireless network?

(A) WPA2 Protocol, WAP not broadcasting SSID, MAC filtering
(B) WPA2 Protocol, WAP not broadcasting SSID, 802.11N network
(C) MAC filtering, 802.11G network, WEP Protocol not broadcasting SSID
(D) WAP not broadcasting SSID, 802.11G network, WEP Protocol with 26 character hexadecimal access code

20. How does a firewall provide system security?

(A) It prevents unauthorised access by checking passwords.
(B) It scans data entering a computer system and quarantines unwanted files.
(C) It allows the system to scan and block specific code within incoming files.
(D) It assesses whether data should be allowed into the system based on specific settings.
Question 21 (6 marks)

(a) Why are power leads tagged? 2

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(b) Describe how a workstation can be set up to minimise neck, back and wrist pain. 4

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**Question 22** (4 marks)

This diagram shows the home page for the ‘BullsEye’ operating system.

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Welcome to BullsEye

BullsEye O.S. is operating system software developed in a collaborative effort by a community of programming experts. The source code is available free of charge and is available for public use and/or modification from its original design.

BullsEye O.S. provides this download without prejudice and “the collaborative” does not make any financial gain from its download. BullsEye O.S. may be downloaded in full or as an ISO to flash media and/or CD-ROM.

>>Latest Release: BE 2.1.1

This latest version of BullsEye contains all bug fixes previously listed by registered users. This version has been through a beta release on mobile and handheld devices for functionality.

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(a) Identify TWO key features that define BullsEye O.S. as open source software.

(b) Outline a procedure for installing BullsEye O.S. using the ISO image from this website.
Question 23 (5 marks)

(a) Why is it NOT necessary to run a disk defragmenting utility on a solid state drive?

(b) The following is part of a server backup log from a small business.

<table>
<thead>
<tr>
<th>Date</th>
<th>Backup type</th>
<th>Media type</th>
<th>Media ID</th>
<th>Verified</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/10/2014</td>
<td>Full</td>
<td>HDD</td>
<td>131003–A</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>131003–B</td>
<td></td>
</tr>
<tr>
<td>6/10/2014</td>
<td>Incremental</td>
<td>Cloud</td>
<td>131006–A</td>
<td>✓</td>
</tr>
<tr>
<td>7/10/2014</td>
<td>Incremental</td>
<td>Cloud</td>
<td>131007–A</td>
<td>✓</td>
</tr>
<tr>
<td>8/10/2014</td>
<td>Differential</td>
<td>DVD</td>
<td>131008–A</td>
<td>✓</td>
</tr>
<tr>
<td>9/10/2014</td>
<td>Incremental</td>
<td>Cloud</td>
<td>131009–A</td>
<td>✓</td>
</tr>
</tbody>
</table>

Using the information in the backup log, describe and justify the most efficient procedure for restoring the full system in the event of a hardware failure on 10/10/2014.
Question 24 (6 marks)

(a) Identify TWO advantages of having a frequently asked questions (FAQs) section on a hardware manufacturer’s website.

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Question 25 (9 marks)

(a) Give an example where HTTPS is more suitable than HTTP.

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(b) The diagram shows the results of a network test.

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Reply from 10.0.0.36:  Bytes = 32  Time = 183ms  TTL=128
Reply from 10.0.0.36:  Bytes = 32  Time =  86ms  TTL=128
Reply from 10.0.0.36:  Bytes = 32  Time = 306ms  TTL=128

Packets sent = 3, Packets Received = 3, Lost = 0 <0% Loss>
Approximate Round Trip times in milliseconds:
Minimum = 86ms, Maximum = 306ms, Average = 192ms
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What is the purpose of this network test?

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Question 25 continues on page 14
Question 25 (continued)

(c) Discuss methods for securing a SOHO network to guard against intrusions and attacks.

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End of Question 25
Question 26 (15 marks)

A new computer is to be built for playing the latest graphic-intensive games.

(a) Justify the use of a separate graphics card, rather than an onboard graphics controller, for this computer. 3

(b) Images of three display-device connectors are shown.

From the connectors shown, identify the most suitable display-device connector for this computer and justify your choice. 4

(c) Recommend internal storage, central processing unit (CPU) and memory components for this new computer and justify your choices. 8
Section IV

15 marks
Attempt Question 27
Allow about 25 minutes for this section

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

In your answer you 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 27 (15 marks)

An online university, with staff and students physically located in different parts of Australia, requires communication resources for its staff and students to interact at any time.

Recommend and justify electronic communication methods and tools that could be used by the staff and students to communicate, collaborate within teams, access resources and submit work.