



## Western Australian Certificate of Education Sample Examination, 2009

### Question/Answer Booklet

# APPLIED INFORMATION TECHNOLOGY

## Stage 3

Please place your student identification label in this box

Student Number: In figures

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In words

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### Time allowed for this paper

Reading time before commencing work: ten minutes

Working time for paper: three hours

### Materials required/recommended for this paper

#### ***To be provided by the supervisor***

This Question/Answer Booklet

Multiple-Choice Answer Sheet

Production Booklet for Section Four

Paper Binder

#### ***To be provided by the candidate***

Standard items: pens, pencils, eraser, correction fluid, ruler, highlighter

Special items: nil

### Important note to candidates

No other items may be taken into the examination room. It is **your** responsibility to ensure that you do not have any unauthorised notes or other items of a non-personal nature in the examination room. If you have any unauthorised material with you, hand it to the supervisor **before** reading any further.

**Structure of this paper**

Section	Number of questions available	Number of questions to be attempted	Suggested working time (minutes)	Marks available
Section One Multiple-Choice	20	20	20	20
Section Two Short Answer Questions	6	6	35	30
Section Three Extended Answer Questions	2	2	50	50
Section Four Production	1	1	75	100
<b>Total marks</b>				200

**Instructions to candidates**

1. The rules for the conduct of Western Australian external examinations are detailed in the *TEE/WACE Handbook*. Sitting this examination implies that you agree to abide by these rules.
2. Section One: Answer all questions on the separate Multiple-Choice Answer Sheet. Use a blue or black pen or a B or 2B pencil.
3. Section Two and Section Three: Answer all questions in this Question/Answer Booklet.
4. Section Four: Answer all questions in the separate Production Booklet.
5. Spare pages are provided in the back of this Question/Answer Booklet.

**Section One: Multiple-Choice****20 Marks**

Attempt all questions in this section. Each question is worth **one** mark.

Record an answer for questions 1–20 on the separate Multiple-Choice Answer Sheet using a blue or black pen or a B or 2B pencil.

If you make an error, follow the instruction given to you on the Multiple-Choice Answer Sheet.

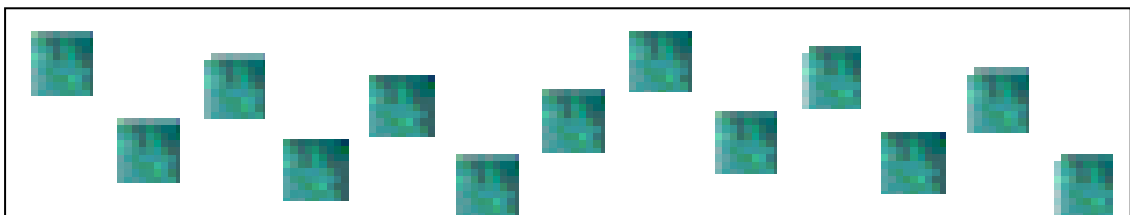
Suggested working time for this section is 20 minutes.

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1. Which of the following is a true statement about a 'Data Warehouse'?
  - (a) It is a repository of an organisation's electronically stored data.
  - (b) It is a secure building where paper based documents can be stored.
  - (c) The data is stored in separate tables so it is difficult to access and can be isolated.
  - (d) The data is arranged in tables of related records and stored in a warehouse.
  
2. The network you use at work has a maximum transfer rate of 100 MB/s, but your home network transfers data at 10 MB/s. When you work from home your work requires you to open, close and email a large number of files in TIFF and BMP format. What formats could you convert these files to so that they did not slow down your home network?
  - (a) Leave the files in TIFF and BMP format.
  - (b) Convert the files all to GIF.
  - (c) Convert the files to JPEG or GIF.
  - (d) Convert the files to ASCII.
  
3. A company has 23 Terabytes of data that is spread over a number of servers which are located in various segments of a star network. The data needs to be backed up to a centralised site on a daily basis. What network-cabling medium is best for downloading this amount of data?
  - (a) Coaxial
  - (b) UTP category 5
  - (c) Fibre optic
  - (d) Wireless
  
4. The Copyright Act allows you to use copyright material without permission if your use is considered as 'fair dealing'. Which of the following uses of copyright material is considered acceptable for this purpose?
  - (a) Critique or review.
  - (b) Advertising a school play.
  - (c) Promotional sound track for a sports club function.
  - (d) Creating a Help document for senior citizens on Internet banking.

5. Disk defragmentation software allows you to
- (a) destroy files stored on your hard drive.
  - (b) physically destroy computer hard drives, CD and DVDs.
  - (c) collect broken files and fix them.
  - (d) maximise space on your hard drive by organising files.
6. The purpose of benchmarking in relation to the design and acquisition of hardware and software is to:
- (a) mimic a particular type of workload on a component or system.
  - (b) assess CPU clock speed and floating point operations per second.
  - (c) assist in the comparison of different architectures and applications.
  - (d) measure input and output performance of the system
7. Data encryption allows you to:
- (a) minimise threats to the integrity and security of data.
  - (b) minimise threats to hackers accessing your computer.
  - (c) maximise storage capacity on your computer system
  - (d) maximise security from computer viruses and malware.
8. A good solution to overcome network bandwidth limitations is to
- (a) increase network connections.
  - (b) reduce the size of files and increase the number of files being transmitted.
  - (c) decrease the capacity of the communications media within the network.
  - (d) increase the capacity of the communications media within the network.

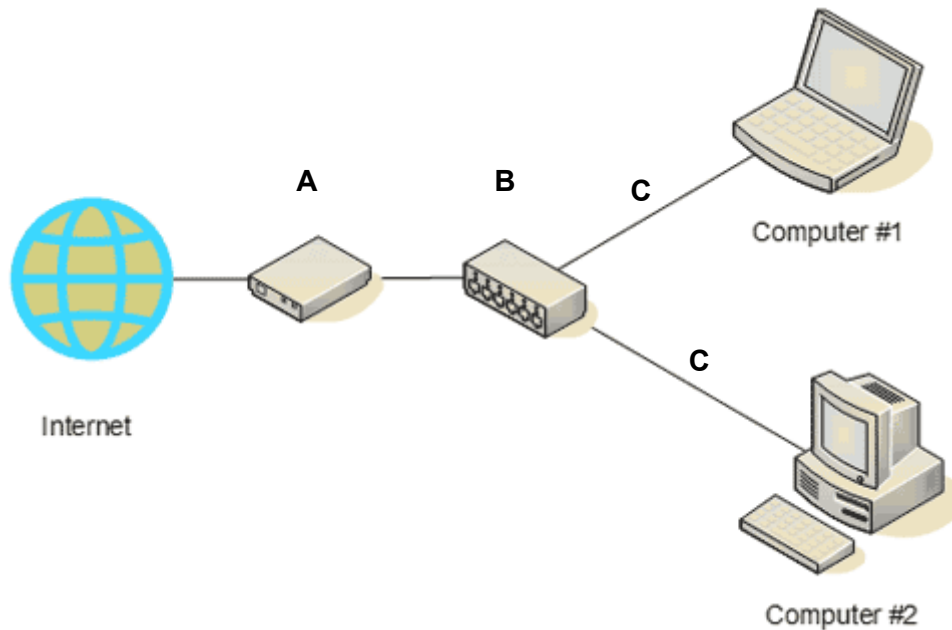
9. The image below demonstrates a principle of design.



This is the principle of

- (a) symmetry.
  - (b) rhythm.
  - (c) balance.
  - (d) emphasis.
10. A small scale networked computer hardware system uses a number of protocols such as TCP/IP and HTTP. These two protocols can be described as
- (a) rules that allow the user to communicate with their computer.
  - (b) rules that allow certain applications to communicate with you.
  - (c) Transmission Communication Protocol Internet Protocol.
  - (d) rules that allow certain applications to communicate over the Internet.

11. A good method of Internet web form data validation is so that
- (a) the server checks data to see if it fits a validation rule.
  - (b) the server checks data to see if it complies with a valid format.
  - (c) all fields are filled in and check that the data fit into a valid range.
  - (d) data is prevented from being submitted to the server until it passes a range of client side validation tests.
12. The correct labels for A, B and C in the diagram above are



- (a) **A** Hub, **B** Unprotected twisted pair cable and **C** Power cable.
  - (b) **A** MODEM, **B** Hub **C** Unprotected twisted pair cable
  - (c) **A** PCMICA card, **B** Power supply and **C** Fibre Optic cable.
  - (d) **A** Network card, **B** Protected twisted pair cable and **C** cable.
13. You intend setting up a computer network and have advertised for a network administrator with industry based certification. Which qualification abbreviation below would best suit a Novell based network?
- (a) WACE
  - (b) CNE
  - (c) BSc
  - (d) MCP

14. A 7 mega pixel digital camera creates a 4 megabyte file per photo. The camera has a 2 gigabyte SD card on which to store the photos. If the camera has a compression facility that can compress each file by 50%, what is the maximum number of photos that can be stored on the SD card?
- (a) 256
  - (b) 512
  - (c) 1000
  - (d) 2000
15. As a victim of identity theft, how would you attempt to resolve your dilemma?
- (a) Ask someone else to collect your mail.
  - (b) Change your bank account details.
  - (c) Prove yourself innocent to avoid financial costs.
  - (d) Have someone impersonate you.
16. The function of a graphics tablet as a specialised peripheral device can best be described as
- (a) a pen and clip board based user interface to a computer system.
  - (b) a device that allows users to draw on the computer screen to create graphics.
  - (c) a stylus-based interface that combined with a tablet, provides a natural way to create computer graphics.
  - (d) a GUI-based interface that provides a way to create computer graphics.
17. The letters OHS refer to an Act of Parliament. The letters stand for:
- (a) Overuse and Health Syndrome.
  - (b) Occupational Health and Safety.
  - (c) Occupational Heart and Safety.
  - (d) Overweight and Health Syndrome.
18. Computer aided manufacturing can be described as
- (a) hardware that assists engineers and machinists to manufacture products.
  - (b) software that assists engineers and machinists to design products.
  - (c) software that assists engineers and machinists to manufacture products.
  - (d) computer based software that assists engineers and machinists to manufacture products.
19. To 'act ethically' means that an employee is to
- (a) conform to accepted professional standards of conduct.
  - (b) conduct themselves in a professional manner.
  - (c) act with integrity.
  - (d) conform to the business' code of conduct.

20. You wish to download off the Internet a large service pack release (3.2 GB). Which type of Internet connection supports the shortest download time?
- (a) Dialup
  - (b) ISDN
  - (c) ADSL 2+
  - (d) Satellite

**End of Section One**

**Section Two: Short Answer**

**30 Marks**

There are six questions in this section. Attempt all questions.

Write your answers in the spaces provided.

Suggested working time for this section is 35 minutes.

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**Question 1**

**(2 marks)**

We live in a society that is increasingly dependant on online services, such as purchasing groceries, banking, selling items, meeting people, entertainment and working out how to get somewhere.

What positive impact does the dependence on online services have on society? Provide an example to justify your response.

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**Question 2**

**(5 marks)**

A multimedia web authoring business has asked you to investigate and compare the operating systems of MS Windows and MacOS as they are currently considering upgrading their current computers systems.

Evaluate the strengths and weaknesses of both operating systems in relation to its intended use and make a recommendation based upon your findings.

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**Question 3****(8 marks)**

A research company has been contracted by a retirement village to conduct a study in preparation for creating a website for its residents and potential clients. An excerpt from the study is provide below.

The research company formed two groups. The members of the first group were senior citizens, had an age structure of 65 years plus, while the second group, the control group, had an age structure of 21–55 years. Both groups require to perform the following:

- Task One: Fact-finding on the internet.
- Task Two: Buying an item online.
- Task Three: Retrieving information from the internet.
- Task Four: Comparing and contrasting websites of a similar nature.

The following table shows selected measurements of three usability attributes averaged across the three tasks.

	<b>Seniors (65+ Years)</b>	<b>Control Group (21–55)</b>
Success Rate (task completed correctly)	52.9%	80.2%
Time on Task (min:sec)	12:33	9.3
Errors (incorrect actions per task)	8.3	0.8

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- [illegible]

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### Question 4

**(5 marks)**

How could a business with a broadband Internet connection use this technology to improve its communication with clients and increase its productivity? Use a detailed example to describe how a business could achieve this.

[illegible]

**(4 marks)**

A company with an in-house network support team that currently administers and maintains the network, wishes to compare alternative methods of network management.

A solution currently being considered by management is **outsourcing** combined with a **service level agreement**. Discuss the advantages and disadvantages of such a solution.

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**(6 Marks)**

With the rapid expansion of ICT, workers are required to ensure that their knowledge, skills and qualifications meet industry standards.

- (a) List two changes in the ICT industry and explain why workers will need to ensure that their knowledge or skills are current in order to meet a changing work environment. (4 marks)

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(b) Suggest two ways that ICT professionals could maintain up to date knowledge and expertise. (2 marks)

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End of Section Two

See next page

**50 Marks**

Suggested working time for this section is 35 minutes.

**(25 marks)**

Competition tent 1: Swimming.  
Competition tent 2: Beach events.  
Competition tent 3: Rescue boards.  
Competition tent 4: Surf boats.

(a) Describe the topology, hardware and software components of the networked environment that would enable Surf Life Saving to run the carnival. (10 marks)

[illegible]

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

- (b) Due to the harsh environment of the carnival the efficiency of the network may be adversely affected. Recommend five troubleshooting methods that could be used to prevent or minimise any potential problems created by the environment. (5 marks)

[illegible]

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(c) The Carnival has two age groups competing; seniors, who are 18 years of age and over, and juniors who are under 18 years of age. The carnival officials want to place digital photographs of competitors on the official carnival website.

Identify two ethical issues which may arise with the placement of images of competitors on the official carnival website. Recommend how these issues may be addressed. (5 marks)

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

- (d) Results are gathered every day and stored on a central database at the clubrooms.

Describe the processes and procedures that should be used by surf life saving officials, judges and carnival organisers to minimise possible threats to the integrity and security of the data? (5 marks)

[illegible]

## Question 2

**(25 marks)**

Read the following scenario and answer the questions which follow.

Pam works for a large company called CyberSupply. Her work involves managing orders that are placed through CyberSupply's website. Once customers fill out a web form, the order is emailed to her. Pam then verifies that the order can be filled by checking CyberSupply's inventory database. Order details are then entered into the customer database and the warehouse notified by email. The goods are then dispatched to the customer at the billing address.

Pam has started a small on-line business for herself selling craft items that she makes at home. She has developed a website to sell these items. In the times when she is at work and has nothing to do, Pam goes onto her website and checks for orders and updates her web site.

CyberSupply recently discovered that Pam was using company time to manage her small online craft business. Consequently, CyberSupply's management have threatened to terminate Pam's employment. It is Pam's belief that the threat of termination is unfair. Her justification is that there are times when she has no work related tasks; she pays for her own website and besides management has not clearly stated whether or not she could not use the Internet for personal business.

- (a) Discuss what ethical issues are created by Pam using CyberSupply's time and computer equipment to conduct personal business. (5 marks)

[illegible]

As a result of discussions with CyberSupply's management, Pam has arranged with CyberSupply to work from home and will be paid an hourly rate. She provides CyberSupply with a time sheet detailing the work she does each day. Pam invoices CyberSupply for the cost of her home monthly Internet connection plus any other expense incurred while working for CyberSupply.

- (b) Discuss five advantages for CyberSupply if Pam was to work from home.

(5 marks)

[illegible]

Now that Pam works from home, she needs to set up new processes and procedures to deal with not being in the office at CyberSupply.

- (c) List five work processes or procedures that Pam will need to adopt to ensure that while working from home she will be able to fulfil her contractual obligations to CyberSupply **and** suggest what changes to those processes and procedures that Pam will have to implement as she now works from home. (10 marks)

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[illegible]

Pam has two children aged 7 and 10 years old. Managing a family and work responsibilities is an area that Pam now has to consider more carefully, as her home and her place of work are the same. Pam will need to reconfigure her home and work environment.

- (d) Discuss five financial impacts that the Occupational Safety and Health Act may have on Pam if she is to make her home a safe work environment.

(5 marks)

[illegible]

## End of Section Three

**Complete Section Four in the separate Production Booklet.**

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