



2005
**HIGHER SCHOOL CERTIFICATE
EXAMINATION**

Information Technology

General Instructions

- Reading time – 5 minutes
- Working time – 2 hours
- Write using black or blue pen
- Board-approved calculators may be used
- Write your Centre Number and Student Number at the top of pages 9, 17 and 19

Total marks – 80

Section I Pages 2–8

15 marks

- Attempt Questions 1–15
- Allow about 15 minutes for this section

Section II Pages 9–22

35 marks

- Attempt Questions 16–20
- Allow about 45 minutes for this section

Section III Pages 23–24

30 marks

- Attempt TWO questions from Questions 21–23
- Allow about 1 hour for this section

Section I

15 marks

Attempt Questions 1–15

Allow about 15 minutes for this section

Use the multiple-choice answer sheet.

Select the alternative A, B, C or D that best answers the question. Fill in the response oval completely.

Sample: $2 + 4 =$ (A) 2 (B) 6 (C) 8 (D) 9
 A ☐ B ☒ C ☐ D ☐

If you think you have made a mistake, put a cross through the incorrect answer and fill in the new answer.

A ☒ B ☒ C ☐ D ☐

If you change your mind and have crossed out what you consider to be the correct answer, then indicate the correct answer by writing the word **correct** and drawing an arrow as follows.

A ☒ B ☒ C ☐ D ☐
 correct
 ↙

1 Which of the following contains information that should all be included on a company letterhead?

- (A) Company: name, address, phone number, fax number, web address, logo and ABN number
- (B) Company: phone number, mobile number, fax number, web address, logo and ABN number
- (C) Company: policy, address, phone number, fax number, web address, logo and ABN number
- (D) Company: name, address, phone number, fax number, mission statement, logo and ABN number

2 Which table correctly classifies the peripheral devices according to function?

(A)

<i>Input</i>	<i>Output/storage</i>
Graphics tablet	DVD
Keyboard	Light pen
Mouse	Monitor – LCD
Scanner	Speakers

(B)

<i>Input</i>	<i>Output/storage</i>
Graphics tablet	CD-ROM
Light pen	Hard disk
Mouse	Monitor – CRT
Scanner	Speakers

(C)

<i>Input</i>	<i>Output/storage</i>
Barcode reader	Floppy disk
Microphone	Monitor – plasma
Speakers	Plotter
Touch screen	Printer

(D)

<i>Input</i>	<i>Output/storage</i>
Barcode reader	DVD
Data projector	Floppy disk
Graphics tablet	Microphone
Keyboard	Printer

- 3 Gina is a union representative in her workplace. She has formed a committee to discuss pay and work conditions. She has approached the supervisor to discuss the committee's concerns.

Which communication technique would Gina find the most useful when discussing these concerns?

- (A) Using active listening
 - (B) Utilising negotiation skills
 - (C) Reading an internal memo aloud
 - (D) Displaying aggressive body language
- 4 Mrs Munro has returned to her job after taking maternity leave. She did not get the promotion she applied for. The company has informed her that it prefers to promote single people because they can travel overseas more readily.

Which form of discrimination has Mrs Munro experienced?

- (A) Direct discrimination on the basis of gender
 - (B) Direct discrimination on the basis of marital status
 - (C) Indirect discrimination on the basis of gender
 - (D) Indirect discrimination on the basis of marital status
- 5 Below is an extract from the Policy and Procedures Manual of a small company.

Printers are to be cleaned weekly with solvent by following the manufacturer's instructions. Each employee is to keep a copy of the manufacturer's instructions and a bottle of the recommended solvent in their desk drawer.

One of the instructions from this extract does NOT conform to OHS guidelines.

Which statement correctly identifies this error?

- (A) Printers do not need to be cleaned at all.
- (B) Solvent should never be used to clean any equipment.
- (C) Solvent should be stored in a specially designed solvent store.
- (D) Printers should not be cleaned by employees but by the manufacturer's trained maintenance staff.

- 6 Carpal tunnel syndrome is an overuse injury.

Which of the following is characteristic of carpal tunnel syndrome?

- (A) Sore and bloodshot eyes
- (B) Stiffness in the neck and shoulders
- (C) Burning sensation in the lower back
- (D) Pain and inflammation in the wrists and fingers

- 7 Ashley has a stand-alone computer. His work requires him to spend a lot of time on the internet downloading modules of code and graphics from websites. His computer is running slowly, freezing and creating duplicate copies of existing files.

What is the most likely cause of these problems?

- (A) The hard drive is full.
- (B) Downloading has consumed RAM.
- (C) The web browser needs to be updated.
- (D) A virus has been downloaded and activated.

- 8 Which of the following actions demonstrates the use of an operating system tool to determine and change hardware properties and status?

- (A) Downloading a free spyware tool to scan the hard drive for unwanted applications
- (B) Purchasing a virus protection application to detect and remove viruses attached to any files stored on the hard drive
- (C) Using a free file compression application to increase the number of files that can be stored on the hard drive
- (D) Using disk cleanup or disk defragmentation tools to reduce the time needed to access files stored on the hard drive

Use the following spreadsheet extract to answer Questions 9 and 10.

	A	B	C	D	E	F
1	Tech Bytes P/L					
2	Quarterly Wages					
3	Region	January	February	March	Total	%
4	North	15 000	17 000	16 000	48 000	8
5	East	72 000	89 000	87 000	248 000	44
6	West	56 000	63 000	65 000	184 000	33
7	South	26 000	29 000	30 500	85 500	15
8	Total	169 000	198 000	198 500	565 500	100

9 What formula has been used in cell E6?

- (A) =SUM(B6:D6)
- (B) =ADD(B6:D6)
- (C) =TOTAL(A6:E6)
- (D) =COUNT(B6:D6)

10 What type of chart would best convey the selected information in columns A and F?

- (A) Bar
- (B) Line
- (C) Pie
- (D) Radar

Use the following database extract to answer Questions 11–13.

Employees						
First Name	Last Name	Address	Suburb	Postcode	Employment Status	Annual Salary
Adam	Banes	1 First St	Wentworthville	2145	Part-time	\$35 700
Lin	Chu	19 Sussex St	Silverwater	2168	Part-time	\$38 250
Fatima	Haddad	351 York Rd	Epping	2121	Full-time	\$76 400
Vinh	Tran	245 Molten Rd	Ryde	2112	Full-time	\$76 400
Jessica	Smith	15 Chester Ave	Drummoyne	2047	Full-time	\$88 000
Leesa	Boyle	7 Banksia Cres	Bonnyrigg	2177	Full-time	\$91 750
Spiro	Poulos	76 Round Cct	Yagoona	2199	Full-time	\$102 500

11 What data structure has been highlighted above?

- (A) Field
- (B) Query
- (C) Record
- (D) Table

12 How has the data in the extract been sorted?

- (A) Ascending, Annual Salary
- (B) Ascending, Employment Status
- (C) Descending, Postcode
- (D) Descending, Suburb

13 This SQL statement is applied to the extract from the Employees database.

```
SELECT First Name, Last Name, Annual Salary
FROM Employees
WHERE Postcode > 2145
ORDER BY Postcode (ascending)
```

What will be the third item in the output list?

- (A) Fatima, Haddad, 2121
- (B) Lin, Chu, 2168
- (C) Leesa, Boyle, \$91 750
- (D) Spiro, Poulos, \$102 500

- 14** Which of the following describes an absolute file path?
- (A) It includes a reference to a hard disk.
 - (B) It assumes the files are located on the current disk.
 - (C) It explicitly names all elements to locate the file, including the disk name.
 - (D) It explicitly names all elements to locate the file, excluding the disk name.
- 15** Software licences often entitle the owner (licensee) to upgrade to the next version of the software.

Which of the following would prevent a licensee from undertaking such an upgrade?

- (A) The upgrade version may not be compatible with the original version.
- (B) Software support on the original version will be invalidated by such an upgrade.
- (C) Data files created in the original version will not be accessible after the upgrade.
- (D) The specifications of the licensee's existing computing system will not support the upgrade.

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Centre Number

Section II

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35 marks

Student Number

Attempt Questions 16–20

Allow about 45 minutes for this section

Answer the questions in the spaces provided.

Question 16 (6 marks)

Please turn over

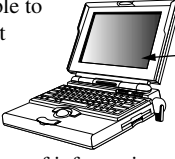
Question 16 (6 marks)

This extract is from a word-processed document.

The image shows a screenshot of a word-processed document with several numbered callouts pointing to specific features:

- 1: Points to the top right corner of the document area.
- 2: Points to the top status bar area.
- 3: Points to the top left corner of the document area.
- 4: Points to the top left corner of the document area.
- 5: Points to the left margin area.
- 6: Points to the left margin area.
- 7: Points to the bottom status bar area.
- 8: Points to the bottom status bar area.
- 9: Points to the bottom status bar area.
- 10: Points to the bottom right corner of the document area.
- 11: Points to the bottom right corner of the document area.
- 12: Points to the bottom right corner of the document area.

The document content includes:

- Chapter 1
- 12/7/2004
- Rationale**
- People can expect to work and live in environments requiring highly developed levels of computing and technological literacy. Current technologies are becoming obsolete at a rapid rate and new generations will need to be more flexible to emerge. It is important choose and use software technology awareness of its and implications. the rapidly evolving area of information and software technology will require lifelong learning.
- 
- accommodate changes as they that students learn about, appropriate information and and develop an informed capacities, scope, limitations Technological competence in
- The study of Information and Software Technology assists students to develop the knowledge, understanding and skills to solve problems in real-life contexts. Through experiential and collaborative tasks, students engage in the process of analysing, designing, producing, testing, documenting, implementing and evaluating information and software technology-based solutions. Creative, critical and meta-cognitive thinking skills are developed through students' practical involvement in projects.
- Core content of the *Information and Software Technology Syllabus* provides students with specialised knowledge of:
 - past, current and emerging technologies
 - data
 - hardware
 - software
 - people involved in the field of information and software technology.
- The core also includes legal, ethical, social and industrial issues. Students develop information and software technology solutions through project work, individually and collaboratively. Options provide opportunities for the contextualisation of the core and allow choices of areas of interest to be made. Options include artificial intelligence, simulation and modelling, authoring and multimedia, database design, digital media, the internet and website development, networking systems, robotics and automated systems, and software development and programming.
- Computer_systemsV7.doc
- p1 of 7
- CONFIDENTIAL

Question 16 continues on page 11

Question 16 (continued)

Complete the following table by placing only ONE number from the diagram on page 10 to identify an example of each word-processing feature.

6

<i>Word-processing feature</i>	<i>Number</i>
Header	
Embedded object	
Page number	
Version control	
Document status	
Margin	

End of Question 16**Please turn over**

Question 17 (6 marks)

Use the following diagrams to answer parts (a) and (b)

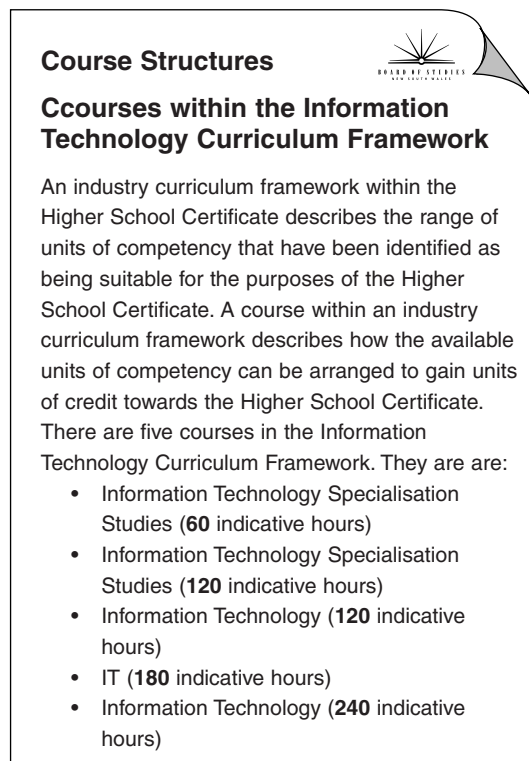


Diagram 1

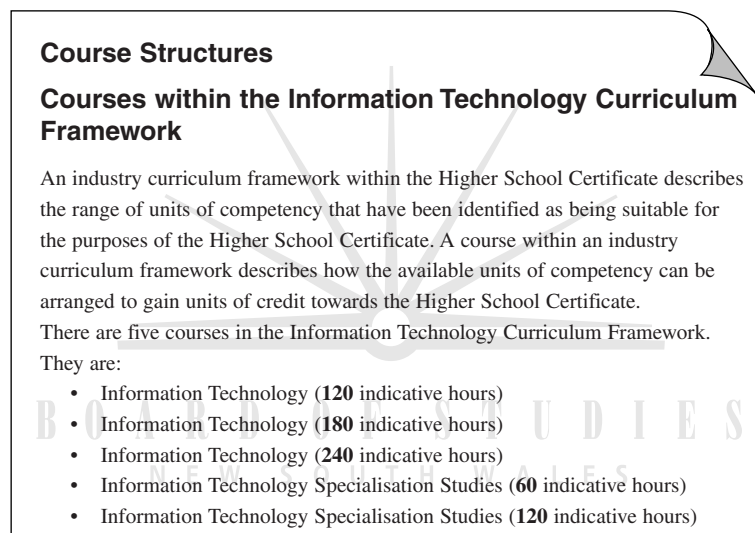


Diagram 2

Question 17 continues on page 13

Question 17 (continued)

The diagrams on page 12 show two versions of a word-processed document. The version shown in **Diagram 1** has been edited and formatted to produce that shown in **Diagram 2**.

- (a) For each of the following categories, identify a formatting feature that has been applied to change **Diagram 1** to **Diagram 2**, using correct terminology.

(i) Text 1

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(ii) Graphics 1

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(iii) Page layout 1

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- (b) Identify THREE text editing changes that have been applied to alter **Diagram 1** to **Diagram 2**.

(i) 1

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(ii) 1

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(iii) 1

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End of Question 17

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BLANK PAGE

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Centre Number

Section II (continued)

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Student Number

Marks

Question 18 (7 marks)

(a) Give an example that demonstrates the use of each of the following:

(i) File conversion **1**

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(ii) File compression **1**

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(iii) Clipboard **1**

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Question 18 continues on page 18

Question 18 (continued)

- (b) Jeff is using *BetterdataV7* at work. He has *BetterdataV6* at home so he saved his database file on a disk to work on over the weekend. At home, when he clicked on the database file icon to open the database file an error message appeared and the file would not open. He has taken the disk back to work where the file will open.

- (i) Explain why the database file did not open on Jeff's home computer. 2

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- (ii) Describe ONE action Jeff could perform on this file so that he can work on it at home and in his workplace. 2

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End of Question 18

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Centre Number

Section II (continued)

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Student Number

Marks**Question 19** (7 marks)

Austec is a training company that offers customised training programs. It has entered into a contract to provide training to a large group of human resource managers on a new software package for staff performance reviews. Austec has purchased the package, paid consultants to train their trainers, and has developed a series of manuals.

The 50 computers to be used for the training require a memory upgrade to run this software package. The new memory arrived from overseas three weeks ago. The invoice was paid and the package was left unopened in the storeroom.

The night before training began, the 50 machines were disconnected, opened, cleaned and the old memory removed. When the box of new memory was opened it was discovered that the new memory was of the wrong type and would not fit the motherboards.

- (a) Outline procedures for ordering and receipt of goods that Austec should have in place to ensure compatibility and avoid system downtime.

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Question 19 continues on page 20

Question 19 (continued)

- (b) Owing to the inability to meet contract requirements the training had to be cancelled. **4**

Analyse the long-term impact of this cancellation on the operations of Austec.

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End of Question 19

Question 20 (9 marks)

Assume you have backup software, a tape drive and a number of tapes that are capable of storing a maximum of 50 gigabytes each. Examine the scenarios below.

(a) *Scenario One*

A file server has 40 gigabytes of data files. Each day 30 gigabytes of these data files are changed. A full backup of data files is performed each night. **2**

Explain why the backup method described is appropriate for this scenario.

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(b) *Scenario Two*

A file server has 100 gigabytes of data files. Each day 10 gigabytes of these data files are changed. Since the last full backup a partial differential backup of data files has been created each night. **2**

Explain why the backup method described is appropriate for this scenario.

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Question 20 continues on page 22

Question 20 (continued)

- (c) A file server has 200 gigabytes of data files. Each day 100 gigabytes of these data files are changed. A full backup is performed every Friday night and partial incremental backups are performed on Monday, Tuesday, Wednesday and Thursday nights.

- (i) What is the minimum number of tapes required to store one week of backup data? (Show all working.) **2**

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- (ii) There was a hard drive failure 15 minutes before business commenced on Wednesday. **3**

Propose a sequence of steps to restore the lost data onto a newly formatted hard drive.

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End of Question 20

Information Technology

Section III

30 marks

Attempt TWO questions from Questions 21–23

Allow about 1 hour for this section

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

In your answers you will be assessed on how well you:

- demonstrate relevant knowledge and understanding
 - communicate ideas and information, using precise industry terminology and appropriate workplace examples
 - organise information in a well-reasoned and cohesive response
 - solve proposed issues or problems
-

Question 21 (15 marks)

You are part of an IT support team. The company does not keep any record of the use of equipment and consumables. Your manager is concerned about the inefficient use of the following inventory items:

- magnetic media;
- optical media;
- paper;
- printer cartridge/toner;
- cleaning supplies.

Write a report evaluating the current situation and suggesting improvements. Your report must give recommendations for each of the five inventory items listed above, and must specify supply, storage and safe disposal for each item. Your recommendations must specify Occupational Health and Safety implications.

Please turn over

In your answers you will be assessed on how well you:

- demonstrate relevant knowledge and understanding
 - communicate ideas and information, using precise industry terminology and appropriate workplace examples
 - organise information in a well-reasoned and cohesive response
 - solve proposed issues or problems
-

Question 22 (15 marks)

Bill and Linda are opening up an advertising agency. They have hired you as an analyst to help them set up their business. You gather data and interview Bill and Linda. You determine that they need to prepare a range of business communication documents, letters and reports; prepare financial statements and pay wages; and store and search their customer contact data to create mailing lists.

Write a proposal to Bill and Linda, recommending the computing packages and operational procedures they will need to establish.

Your proposal must cover the following issues:

- the identification of appropriate software;
- the access, retrieval and manipulation of data;
- the access to and use of help;
- the use of the keyboard and equipment;
- the maintenance of system and data security.

Question 23 (15 marks)

You have been employed by the Principal of the local high school to inform the school of best practice to maintain the integrity of the school's computer system.

You need to make sure the school has detailed documentation to support them in the following important areas:

- file maintenance;
- virus scanning;
- software copyright and recording of software licences;
- file security, file attributes and privacy;
- the impact that installing or upgrading software has on system integrity.

Write a support manual to provide the school with a set of procedures for best practice in these FIVE categories.

End of paper