2006

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 21

Total marks – 80

(**Section I**) Pages 2–7

15 marks

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

(**Section II**) Pages 9–21

35 marks

- Attempt Questions 16–19
- Allow about 45 minutes for this section

(**Section III**) Page 23–26

30 marks

- Attempt TWO questions from Questions 20–22
- 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.

correct

A ✖   B ✖   C ◯   D ◯

1 What is the software installation option you would choose if you wanted to disable some functions of the software?

(A) Full

(B) Typical

(C) Custom

(D) Portable

2 What is the primary source of information about specifications for a hardware device?

(A) The manufacturer's manual

(B) The occupational health and safety legislation

(C) The organisation's policy and systems manual

(D) The requirements on the hardware purchase order

3 What are the advantages of registering your software?

(A) You receive free mouse mats and cheap updates.

(B) You receive special offers and the assurance of free technical support 24/7.

(C) You receive patches and the assurance of free software upgrades.

(D) You receive patches and the assurance that copyright laws have not been breached.

4 Which of the following is an INCORRECT statement about occupational health and safety when using a computer?

(A) Chairs should be adjustable and the user's feet should be supported.

(B) To improve readability the light source should be directed at the monitor.

(C) Keyboard height should ensure that the forearms are parallel to the floor and the wrists are not bent.

(D) Job rotation and incorporating breaks and exercise into work routines can reduce the risk of repetitive strain injury.

5   Which of the following shows how temporary files and clipboard contents are stored?

Storage

	Temporary files	Clipboard contents
(A)	RAM	Hard disk
(B)	Hard disk	RAM
(C)	Hard disk	CPU
(D)	CPU	Hard disk

Refer to the following diagram to answer Questions 6, 7 and 8.

	A	B	C	D	E	F	G
1	**COMPANY NAME**						
2	**SALES ($ '000)**						
3	**YEAR**	2006					
4	****						
5	**Month**	**Sydney**	**Newcastle**	**Wollongong**	**TOTAL**		
6	January	15	13	9	47		
7	February	14	11	9	43		
8	March	13	11	8	40		
9	April	9	9	7	33		
10	May	8	8	8	31		
11	June	15	8	7	35		
12	July	12	7	6	30		
13	August	11	7	5	29		
14	September	10	9	7	33		
15	October	15	8	8	40		
16	November	14	10	9	42		
17	December	20	12	12	55		
18	****						
	TOTAL SALES	156	113	95	458		
20	**HIGHEST SALES**	20	13	12	55		

6   What has been typed into the cells indicated by arrows?

(A)   Formula, label, value

(B)   Column, row, value

(C)   Column, range, row

(D)   Formula, label, row

7 Which formula was used in cell C20?

(A) = Max (C6 : 17)

(B) = Max (C6 : C17)

(C) = (Max C6 : C17)

(D) = (Max : C6 : C17)

8 A template was used to generate this spreadsheet. Which cells would have had information entered in this template?

(A) A1 : B3, A5 : E17, B5 : E5

(B) A1 : B3, A5 : A20, B5 : E5

(C) A1 : A20, B19 : E20, B5 : E5

(D) A1 : B17, A19 : A20, B5 : E20

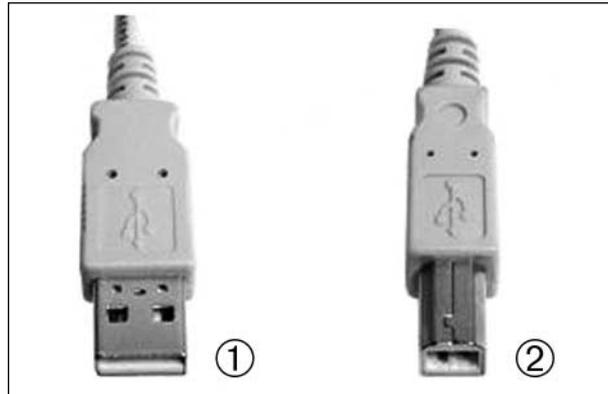**9** You are responsible for repairing hardware in the organisation shown below.

Organisation chart
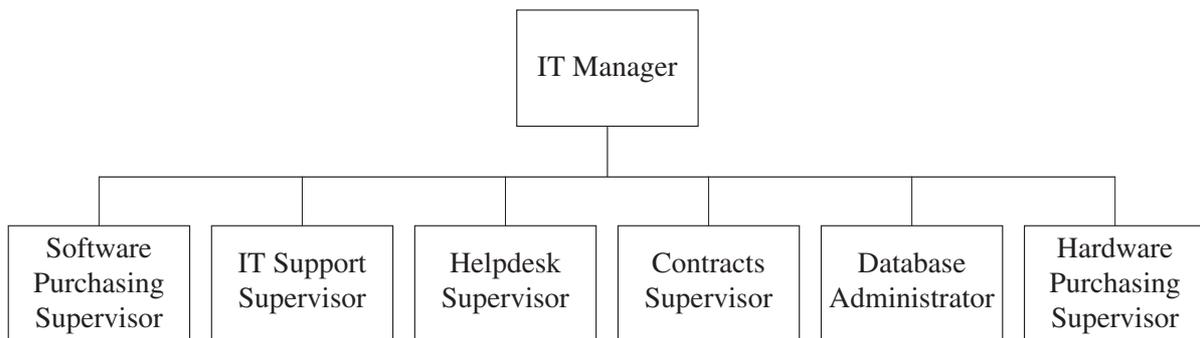
Who is the person most likely to be your immediate supervisor?

(A) IT Manager

(B) Helpdesk Supervisor

(C) IT Support Supervisor

(D) Hardware Purchasing Supervisor

10 Which of the following statements correctly describes connectors ① and ② and the type of cable used?

(A) ① is an *A connector*, ② is a *B connector*, and the cable is *Cat5E*.

(B) ① is an *A connector*, ② is a *B connector*, and the cable is *USB*.

(C) ① is a *B connector*, ② is an *A connector*, and the cable is *Cat5E*.

(D) ① is a *B connector*, ② is an *A connector*, and the cable is *USB*.

11 Part-time pay claims for Saturday 26/8/2006 were rejected with the message `'26/8/05 WAS A FRIDAY – WEEKEND PENALTY RATES DO NOT APPLY'`. All other pay claims were accepted.

What is the most likely cause of this error?

(A) There was a hardware failure.

(B) The CPU speed was wrong.

(C) There was a power failure in the server room.

(D) An incorrect backup tape was used to restore data after a disk failure.

12 Which method of storage is used in the device shown?

(A) USB

(B) Optical

(C) Magnetic

(D) Non-volatile

13 An IEEE1394A cable is backward compatible with an IEEE1394 device.

What does this statement mean?

(A) An IEEE1394A cable can never transmit data from an IEEE1394 device.

(B) An IEEE1394A cable will transmit data from an IEEE1394 device at IEEE1394A speed.

(C) An IEEE1394A cable will transmit data from an IEEE1394 device at IEEE1394 speed.

(D) An IEEE1394 cable will transmit data from an IEEE1394A device at IEEE1394A speed.

14 What is the primary reason for organisations keeping copies of email and email attachments even after both the sender and the receiver have deleted these messages?

(A) To assist in resolving legal disputes

(B) To form a log to track computer activity

(C) To train employees in workplace communication skills

(D) To track viruses which are delivered as email attachments

15 What distinguishes a template from a wizard?

(A) A template saves time and implements standards for the layout of documents. A wizard performs a process automatically.

(B) A template saves time and implements standards for the layout of documents. A wizard automatically corrects spelling and grammatical errors.

(C) A template is a file designed for repeated use. A wizard is a series of dialogue boxes which guides users through a process by presenting choices.

(D) A template is a temporary file which is designed to be overwritten. A wizard is a series of dialogue boxes which guides users through a process by presenting choices.

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Information Technology

Section II

35 marks
Attempt Questions 16–19
Allow about 45 minutes for this section

Answer the questions in the spaces provided.

Question 16 (7 marks)

Please turn over

Question 16 (7 marks)

The procedure on page 11 is used by an organisation to assist IT support staff by specifying the tasks undertaken when obtaining and installing software applications. Undertaking these tasks in this order ensures that system integrity is maintained and that software installation follows best practice.

These seven tasks are missing:

① Determine compatibility of required software with client workstation

② Report on completion of installation made to supervisor

③ Backup copy made of client workstation

④ Software budget checked for available funds

⑤ Configure new software to client and organisation requirements

⑥ Approve purchase, obtain quotes and prepare Purchase Order

⑦ Appointment made for installation on client workstation to minimise disruption to client and to organisation

Question 16 (continued)

Place the seven tasks in their correct position on this list by writing the task number **7**
in the space provided.

Guidelines to obtaining and installing client software applications

	Personnel	*Task*
1	IT staff	Client software requirements determined and documented
2	IT staff	
3	IT staff	Supervisor informed of client requirements and compatibility
4	IT supervisor	Compatibility of software with network and organisational guidelines checked
5	IT supervisor	Licensing requirements checked
6	IT supervisor	
7	IT supervisor	
8	IT supervisor	Sends Purchase Order to nominated supplier
9	IT staff	Delivery received and checked against Purchase Order
10	IT supervisor	Media and manuals recorded in Asset Register
11	IT staff	Software licence number recorded in organisation's Licence Control database
12	IT staff	Backup copies of software disks made and stored safely if permitted under licence
13	IT staff	Central software installation completed if applicable
14	IT staff	
15	IT staff	At arranged time, client workstation checked for viruses, illegal software and operating system patches
16	IT staff	Hard disk on client workstation defragmented if necessary
17	IT staff	
18	IT staff	Install new software on client workstation
19	IT staff	Test basic functionality
20	IT staff	
21	IT staff	Client tests new software and changes made to configuration as required
22	IT staff	Client approves installation
23	IT staff	Location of new software recorded on Licence Control Database
24	IT staff	
25	IT supervisor	Invoice paid

End of Question 16

Question 17 (10 marks)

The following tables are part of a library database.

Book Table				
Book_No	**Book_Title**	**Author**	**Publisher**	**ISBN**
001.567/9	Information Technology	Koreneff & Sims-McLean	Pascal Press	1741251176
303.483	Information Technology	Hartles & Kelly	Heinemann	1740811119
001.3123/3	Webster's Computer Dictionary	Pfaffenberger	Wiley	076452478X
001.3124/7	Dictionary of Computing	Collin	Bloomsbury	0747566224
343.123	I.T. Curriculum Framework	OBOS	Board of Studies	1740994116

Borrower Table					
Borrower_ID	**Title**	**F_Name**	**L_Name**	**Address**	**Phone_No**
1011	Ms	Kim	Pine	17 York St Sydney 2000	92123451
1012	Mr	Ti	Huon	19 Clarence St Sydney 2000	92343467
1013	Mrs	Frieda	Pharos	25 Miller St Nth Sydney 2060	92562134
1014	Miss	Angela	Webster	333 Bourke St Darlinghurst 2010	92897129
1015	Mr	Lech	Gowitzer	256 George St Sydney 2000	92787896
1016	Ms	Jane	Wayne	186 Phillip St Sydney 2000	92698508
1017	Mr	Heath	Wayne	186 Phillip St Sydney 2000	92698508

Loan Table			
Book_No	**Borrower_ID**	**Date_Due**	**Loan_ID**
343.123	1012	28/9/06	100056
001.3123/3	1015	30/9/06	100057
001.567/9	1011	26/9/06	100058
303.483	1014	25/9/06	100059

Question 17 (continued)

(a) (i) How many fields are in the Book Table? **1**

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   (ii) How many records from the Borrower Table on page 12 are displayed? **1**

....

(b) SELECT   : Date_Due, F_Name, Phone_No **3**
               Book_Title
     FROM   : Loan, Borrower, Book
     WHERE   : Date_Due < = 27/9/2006
     ORDER BY : Date_Due

Write the report generated by this SQL statement when it is applied to the tables on page 12.

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Question 17 (continued)

(c) This form letter is to be used by the library in a mail merge to advise a borrower about an overdue book. When the mail merge is attempted using the tables on page 12, the letter does not accurately reflect the data.

4

<Title> <L_Name>,
<Address>,
<Suburb>   <Postcode>,

Dear <F_Name>

OVERDUE LOAN

We wish to bring to your attention that the following book is now overdue:

<Book_Title>

<Author>

<Date_Due>

Please return the above book as soon as possible.
Yours sincerely
Librarian

Describe how to modify the database on page 12 so that it is compatible with the form letter above.

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(d) The library wants speedier recovery of overdue books and is investigating the use of email. Suggest a modification to the database to enable the sending of email notifications.

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End of Question 17

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Centre Number

Student Number

Marks

Question 18 (12 marks)

Kim works in the IT Department and has discovered that the IT printer needs a new toner cartridge.

The organisation has in place the following procedure for ordering consumables.

① Check with the Stock Controller in case item is in stock

② If none in stock obtain quotes from three suppliers

③ Select a supplier

④ Complete Stock Order Form

⑤ Attach quotes to Stock Order Form

⑥ Take Stock Order Form to your supervisor for signature

⑦ Take Stock Order Form to the Finance Controller for signature

⑧ Take Stock Order Form to Stock Controller for signature, purchasing and filing

⑨ The Stock Controller fills in the Purchase Order and files all documents

⑩ On delivery the person ordering goods will be contacted by the Stock Controller to collect items

(a)   (i)   According to the procedure above, identify the people who must sign the Stock Order Form before the order is placed.   **1**

(1)   ....

(2)   ....

(3)   ....

(ii)   What does Kim need to check before ordering consumables?   **1**

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Question 18 (continued)

The printer in IT is manufactured by Intelligent Integrated Products Pty Ltd. It is a black-and-white laser printer Model Number IIP2300LaN with a speed of 20 ppm and resolution of 1200 dpi. Below are quotes for replacement cartridges from three suppliers.

Intelligent Integrated Products Pty Ltd
11 Lasering Rd
Downtown, NSW 2999

Ph (02) 9999 9999
Fax (02) 8888 8888

Part No 11PE23

B&W Laser Cartridge for
IIP2300LaN with cleaning kit

Up to 20,000 pages $149.00

Postage & handling (included)

Crystal Clear Integrated Products
51 Ring Rd
Uptown, NSW 2901

Ph (02) 9999 5678
Fax (02) 9999 1234

Part No CC2000 series

B&W Laser Cartridge, model CC2000

Suitable for:
IIP 2000, 2100, 2200, 2250N, 2320, 2350, 2400 laser printers and all 2 series Sister Printers

Up to 12,000 pages $65.00

Plus postage & handling $15.00

Recycled Cartridges Pty Ltd
1 Inkering Rd
Hacville, NSW 2199

Ph (02) 6666 9999   Fax (02) 6666 8888

Part No RL23

B&W Laser Cartridge (re-manufactured) for IIP2300LaN

Up to 8,000 pages $99.00

Plus postage & handling $15 (per order)

Question 18 (continued)

(b)   Which supplier would you recommend?   **3**

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Justify your recommendation.

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(c)   This organisation has a policy of re-ordering five toner cartridges at a time. Outline THREE advantages of this policy.   **3**

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Question 18 (continued)

(d)   Use the information on pages 17, 18 and 19 to complete the following Stock Order Form ready for Kim's supervisor to check.   **4**

Stock Order Form			
Supplier details _____ _____ _____ _____ Phone _____ Fax _____ Dept requesting _____ Person requesting _____	Stock Order Number		S0174
	Quotes from 1. _____ 2. _____ 3. _____		
	Accepted quote _____ Why accepted _____ _____		

Part No	Description	Quantity	Price	Total
	Post & handling			

Approvals		Total	
Signature 1			
Signature 2		Purchase Order No	
Signature 3		Entered in Stock Control DB	

End of Question 18

– 20 –

Information Technology

Centre Number

Section II (continued)

Student Number

Marks

Question 19 (6 marks)

(a)   Compare the use of the telephone and email as internal business communication tools.

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(b)   Assess the suitability of using the telephone instead of a fax when informing a job applicant that he/she has been successful.

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Information Technology

Section III

30 marks
Attempt TWO questions from Questions 20–22
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 20 (15 marks)

You have recently won a contract to produce a CD containing samples of student work in Information Technology. The CD will contain text, copies of handwritten documents, photos, diagrams, video and sound. To prepare content for a CD like this you must spend many hours at the computer.

Your workstation is a Pentium IV 2.8 GHz processor with 1 GB of RAM, 120 GB of hard disk space, on-board 256 MB video card, on-board 32 bit sound card, 19 inch LCD monitor, 52 speed CD reader, keyboard and mouse.

Write a report to evaluate THREE input devices and THREE output devices which you need to add to this system to create the content and produce a master copy of the CD. Your answer should include the occupational health and safety considerations in setting up your computer workstation to undertake this contract.

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)

UniPrint Pty Ltd prepares course manuals for university students using desktop publishing software. UniPrint has a very high demand at the beginning of each semester in March and July. In July 2006 the high-speed WorkHorse9 printer failed repeatedly and students did not get their manuals on time. The manager at UniPrint has asked for help from the technician at WorkHorse to make sure this does not happen again.

Using the information provided, write a report to the manager at UniPrint Pty Ltd which analyses the reasons for the problems with their printer and which proposes short-term and long-term solutions to these problems under the operating conditions at UniPrint Pty Ltd.

The manufacturer's recommended maintenance schedule is given below.

	Recommended maintenance schedule for WorkHorse9 Allow 3 working days for delivery of parts		
	Frequency	*Indicators*	*Action required*
1	Every 150 000 pages	The message 'REPLACE FUSER UNIT' appears in the instruction panel.	REPLACE FUSER UNIT: • Remove old fuser unit • Clean fuser unit area with cleaning material (supplied) • Insert new fuser unit
2	Every 300 000 pages	The message 'REPLACE PAPER FEED UNIT' appears in the instruction panel.	REPLACE FUSER UNIT: (see above) REPLACE PAPER FEED UNIT: • Remove old paper rollers • Clean roller area with cleaning material (supplied) • Attach new paper rollers
3	Every 2 000 000 pages	The message 'FULL SERVICE REQUIRED' appears in the instruction panel.	Ring 1 200 300 to arrange an appointment with one of our service engineers

Question 21 (continued)

The WorkHorse9 is a very expensive, high capacity printer which is networked and connected to the internet. The printer automatically sends an email to the manufacturer's helpdesk to make a record of routine maintenance procedures carried out by UniPrint. Additional maintenance information is also entered manually in this log.

SELECTED ENTRIES FROM WORKHORSE9 MAINTENANCE LOG FOR UNIPRINT MACHINE NO.1				
Date	*Call ID*	*Number of pages*	*From*	*Details*
9/7/05	155	615 121	Workhorse Technician	Service call: Installed new paper feed kit and fuser unit, cleaned
15/7/05	165	760 010	Umar UniPrint	Phone call: Copies marked, streaky Service call: Fuser unit replaced and cleaned
30/7/05	173	900 030	Printer	Paper feed unit replaced. Fuser unit replaced
4/10/05	183	1 065 050	Printer	Fuser unit replaced
6/3/06	190	1 215 000	Printer	Fuser unit replaced
7/3/06	193	1 227 000	Catrina UniPrint	Phone call: printer won't print
8/3/06	193	1 227 000	Workhorse Technician	Service call: Installed paper feed kit, installed new fuser unit. Cleaned
15/3/06	210	1 370 010	Printer	Fuser unit replaced
28/3/06	221	1 550 980	Lisa UniPrint	URGENT Phone call: printer keeps clogging. Service call: Paper feed kit and fuser replaced, cleaned and adjusted
5/6/06	240	1 658 027	Uho UniPrint	Phone call: copies filthy Service call: Replaced fuser unit
2/7/06	252	1 800 235	Printer	Fuser unit replaced
2/7/06	253	1 802 305	Mary UniPrint	Phone call: Paper jamming and creasing
3/7/06	253	1 802 305	Workhorse Technician	Service call: Paper feed kit installed, fuser unit installed and machine cleaned
8/7/06	268	2 110 065	Greg UniPrint	Phone call: creased copies, keeps jamming, noisy operation

End of Question 21

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)

E-Travel Pty Ltd is a small company which publishes an online magazine about holiday travel. It employs professional journalists to write feature articles and accepts contributions from readers about their holiday experiences.

Each issue of the online magazine features one destination and has the following sections:

① Editorial

② Featured destination
- History
- How to get there
- Things to do
- Special deals

③ Readers' experiences at the featured destination

After a few issues it was found that a lot of time was spent converting file formats and formatting the readers' contributions, including text, graphics, sound and video. It was difficult to find files submitted about the featured destination and to track the status of articles prior to publication.

Write a report to analyse the software requirements and file handling procedures needed to produce the online magazine. Your report should address:

- software applications;
- strategies to simplify converting and formatting readers' files, and;
- strategies to locate and track the status of files.

End of paper