



**B O A R D O F S T U D I E S**  
NEW SOUTH WALES

**2003**

**HIGHER SCHOOL CERTIFICATE  
EXAMINATION**

# Information Technology

## General Instructions

- Reading time – 5 minutes
- Working time – 2 hours
- Write using black or blue pen
- Draw diagrams using pencil
- Board-approved calculators may be used
- Write your Centre Number and Student Number at the top of pages 9, 13, 17 and 25

**Total marks – 80**

**Section I** Pages 2–8

**15 marks**

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

**Section II** Pages 9–19

**35 marks**

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

**Section III** Pages 21–25

**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.

A  B  C  D   
*correct* ↙

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- 1 What type of software installation allows users to select the components they wish to install?
- (A) Custom
  - (B) Full
  - (C) Portable
  - (D) Typical

- 2 A new printer was ordered. When it was received in the IT department the box appeared to have been opened and resealed.

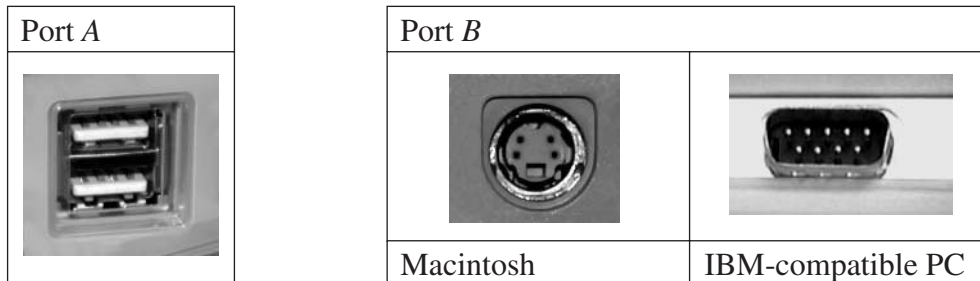
What would be the most appropriate source of information to determine if any item is missing?

- (A) Driver disks
  - (B) Packing list
  - (C) Purchase order
  - (D) Warranty and registration cards
- 3 A full backup of the fileserver is done every Friday night and an incremental partial backup on other working nights. A virus was downloaded and activated on Wednesday which irretrievably damaged a variety of files.

What steps must be taken to best restore the system?

- (A) Update virus pattern files; quarantine damaged files; remove the virus; restore using: full backup, Tuesday's partial backup.
- (B) Quarantine damaged files; remove the virus; restore using: full backup, Monday's partial backup, Tuesday's partial backup; update virus pattern files.
- (C) Remove the virus; restore using: full backup, Tuesday's partial backup, Monday's partial backup; update virus pattern files; quarantine damaged files.
- (D) Update virus pattern files; quarantine damaged files; remove the virus; restore using: full backup, Monday's partial backup, Tuesday's partial backup.

- 4 What is the most appropriate method of transferring data from a 10 000-row spreadsheet to a table in a word processor document if there is no common file format?
- (A) Copy and paste.  
 (B) Create a screen dump and import it as a bitmap file.  
 (C) Export it as a delimited TXT file and import the TXT file.  
 (D) Save it as a TXT file and open the TXT file in the word processor.
- 5 An electronic publication on a company's WAN contains a chart of the latest sales figures. What is the best method of automatically updating this chart?
- (A) Linking to the chart  
 (B) Embedding the chart  
 (C) Hyperlinking to the chart  
 (D) Cut and paste the chart as required
- 6 Ports *A* and *B* are used to connect peripheral devices to Macintosh and IBM-compatible PCs. Port *A* is the same on both types of computer. Port *B* looks different but has the same function on both types of computer.



Which of the following is correct?

- (A) Port *B* can use longer cables than Port *A*.  
 (B) Port *B* cannot supply power to the peripheral.  
 (C) Port *B* can allow hot swapping of peripherals.  
 (D) Port *A* is slower and therefore can be daisy-chained.

- 7 Under current legislation, training is mandatory for members of some workplace committees. To which of the following does this apply?
- (A) Anti-discrimination
  - (B) Environment
  - (C) Occupational Health and Safety
  - (D) Social
- 8 Using the edit function of a word processor, how many changes would occur in the text below after executing the command FIND ' in' and REPLACE with ' it'?

A career in IT can include support, programming, hardware maintenance or system analysis. All fields are a basis for later management roles if further training is undertaken.

- (A) 1
- (B) 2
- (C) 4
- (D) 6

Use the following information from a word processor document to answer Questions 9 and 10.

**Table 1 — Unformatted**

	Company A		Company B	
Quarter ending	Income	Expenditure	Income	Expenditure
30/09/01	xxxxx	xxxxx	xxxxx	xxxxx
31/12/01	xxxxx	xxxxx	xxxxx	xxxxx
31/03/02	xxxxx	xxxxx	xxxxx	xxxxx
30/06/02	xxxxx	xxxxx	xxxxx	xxxxx

**Table 2 — Formatted**

	Company A		Company B	
Quarter ending	Income	Expenditure	Income	Expenditure
30/09/01	xxxxx	xxxxx	xxxxx	xxxxx
31/12/01	xxxxx	xxxxx	xxxxx	xxxxx
31/03/02	xxxxx	xxxxx	xxxxx	xxxxx
30/06/02	xxxxx	xxxxx	xxxxx	xxxxx

- 9** How do you centre the heading 'Company A' across two columns?
- (A) Select the row, use the 'Merge Cells' command and align.  
 (B) Select the two cells, use the 'Split Cells' command and align.  
 (C) Select the two cells, use the 'Merge Cells' command and align.  
 (D) Select the first column, use the 'Split Cells' command and align.
- 10** Which other formatting features are used to convert Table 1 to Table 2?
- (A) Bold and align  
 (B) Bold and shade  
 (C) Shade and align  
 (D) Borders and align

- 11 Why would operators use the *form* view rather than the *table* or *list* view when looking for data in a database?
- (A) To increase the number of records displayed
  - (B) To improve readability and simplify search results
  - (C) To reduce the security of data displayed and decrease the search time
  - (D) To decrease the number of records displayed and decrease the search time
- 12 Why is the record locking feature used in shared databases?
- (A) To prevent any user changing any field at any time
  - (B) To prevent any user changing any record at any time
  - (C) To prevent multiple users changing the same field at the same time
  - (D) To prevent multiple users changing the same record at the same time

**Please turn over**

Use the following spreadsheet to answer Questions 13–15.

This spreadsheet calculates weekly wages for a rapidly expanding company.

	A	B	C	D	E	F	G	H
1	<b>Employee name</b>	<b>Employee number</b>	<b>Hourly pay rate</b>	<b>Standard hours</b>	<b>Overtime hours</b>	<b>Gross pay</b>	<b>Tax</b>	<b>Net pay</b>
2	Samar Lin	76	\$10	12	5	\$195.00	\$58.50	\$134.00
3	Gordon Tew	31	\$12	17	0	\$204.00	\$61.20	\$140.30
4	Ling Jones	92	\$15	14	10	\$435.00	\$130.50	\$302.00
5	<b>Totals</b>						\$250.20	\$576.30
6	<b>Overtime rate</b>	1.5						
7	<b>Union fees per week</b>	\$2.50						
8	<b>Tax</b>	30%						

- 13** Net pay is calculated by subtracting tax and union fees from gross pay. What would be the most effective formula to use in cell H2?
- (A) =F2–B8–B7  
 (B) =F2–G2+B7  
 (C) =F2–G2–\$B7  
 (D) =F2–G2–\$B\$7
- 14** What would be the most effective formula to use in cell G5?
- (A) =G2+G3+G4  
 (B) =SUM(G2:G4)  
 (C) =ADD(G2:G4)  
 (D) =SUM(G2:G5)
- 15** What would be the most effective formula to calculate the average of the actual hours worked by the employees?
- (A) =SUM(D2:E4)/3  
 (B) =Average(D2:D4)  
 (C) =(SUM(D2:D4)+SUM(E2:E4))/3  
 (D) =(SUM(D2:D4)+SUM(E2:E4))/COUNT(D2:D4)



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Centre Number

**Section II**

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Student Number

**35 marks**

**Attempt Questions 16–19**

**Allow about 45 minutes for this section**

Answer the questions in the spaces provided.

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**Question 16** (14 marks)

**Please turn over**

**Question 16** (14 marks)

You have just completed the table below showing entries in a database of hardware peripherals.

HARDWARE: TABLE									
Peripheral	Type	Interface	Model	Cost	Maker	Address	Suburb	P'code	Phone
monitor	output	svga	s flat 17xp	\$899.00	XYZ	25 Xam Rd	Forest	2177	66664325
scanner	input	usb	xy600z3	\$99.00	XYZ	25 Xam Rd	Forest	2177	66664325
scanner	input	usb	scan600tg3	\$199.99	Firefly	15 Fires Ave	Kew	2161	76595467
scanner	input	usb	600uxt+	\$100.00	Xtreme	2 New St	Ceels	2272	88654009
scanner	input	network	600nxt+s	\$125.00	Xtreme	2 New St	Ceels	2272	88654009
monitor	output	vga	17svga+pro	\$888.00	XYZ	25 Xam Rd	Forest	2177	66664325
printer	output	usb	hj500b18	\$99.00	Firefly	15 Fires Ave	Kew	2161	76595467
monitor	output	vga	dsvga17flatx	\$750.00	Firefly	15 Fires Ave	Kew	2161	76595467
▶ scanner	input	parallel	600pxt+t	\$99.00	Firefly	15 Fires Ave	Kew	2161	76595467

- (a) A colleague informs you that she created a spreadsheet with similar information which contains about 100 rows of additional data. You want to add her spreadsheet data into your database.

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Using any spreadsheet or database application, outline, in correct sequence, the steps to efficiently incorporate the spreadsheet data into the database.

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**Question 16 continues on page 11**

Question 16 (continued)

- (b) (i) Identify the characteristics of a field in a database. 2

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- (ii) You wish to add a picture of each peripheral to your database. Assuming you have never attempted this, identify TWO ways of finding out how to show a picture in a database field. 2

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- (c) Using the database on page 10, write a query in SQL to show the following results. 3

	Cost	Peripheral	Maker	Model
▶	\$99.00	scanner	XYZ	xy600z3
	\$99.00	scanner	Firefly	600pxt+t

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**Question 16 continues on page 12**

Question 16 (continued)

(d) Your company wants to send a letter personally addressed to the manager of each of the companies listed in the database.

(i) Identify any additional data needed to complete this task. **1**

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(ii) Identify the process and list the necessary steps, in the correct sequence, to create these letters. **3**

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**End of Question 16**

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Centre Number

Section II (continued)

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Student Number

Marks

Question 17 (9 marks)

- (a) You have received the following note from a colleague.

Gina,

My laser printer has stopped working!!! I cannot print from MS Word 2000 or Adobe Illustrator. It won't even print from NOTEPAD. All the lights are on. I put in a new cartridge but it still does not work. After that I tried some troubleshooting tips from the printer manual. I held down the start button and it printed a test page OK. Then I checked the cables. I even swapped them with Mike's cables and they are OK. We swapped the printer and it works on Mike's computer.

I was trying to print a test page from the printer management screen and I can't do it. I tried to see if my printer was set to default but I cannot even find my printer icon on the printer management screen. It seems to have got lost??? It was working fine last week before Lyn upgraded my computer to the new operating system. She said the new operating system would improve things???

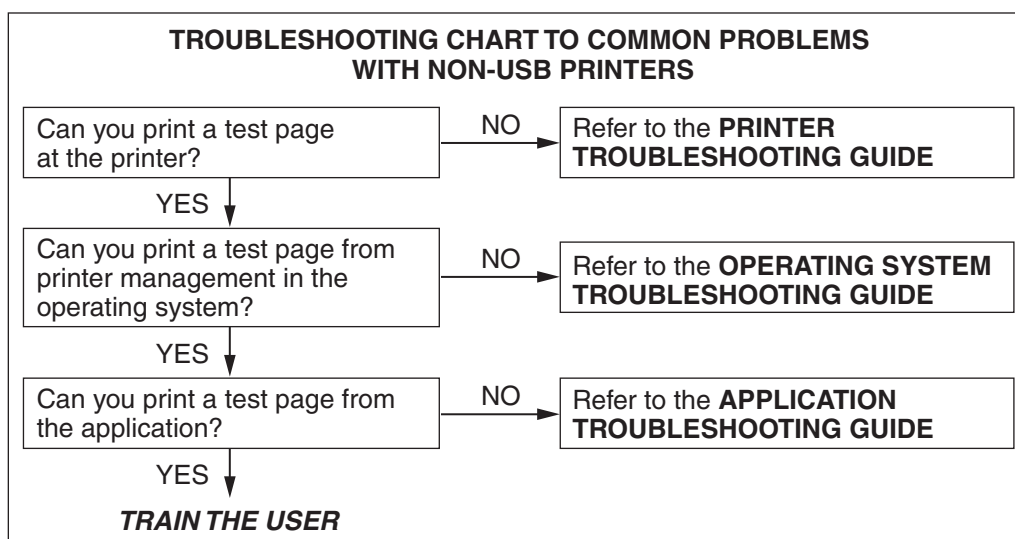
It's urgent!!! I really need to print a report this afternoon. Could you look at it while I am away at the client's office this morning?

Thanks, Kathy

- (i) From the troubleshooting chart below, identify whether to use the **PRINTER**, **OPERATING SYSTEM** or **APPLICATION TROUBLESHOOTING GUIDE**.

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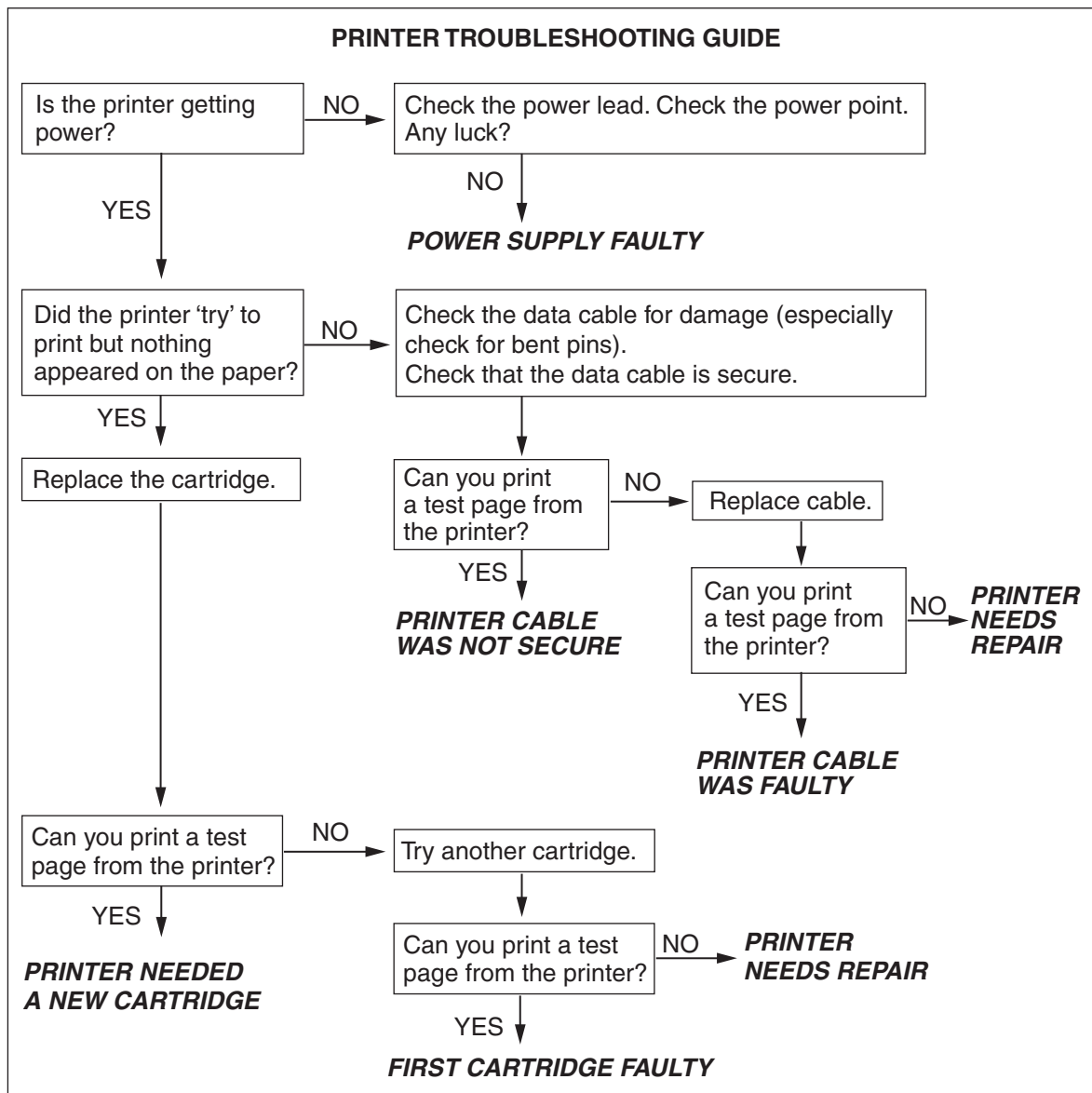


Question 17 continues on page 14

Question 17 (continued)

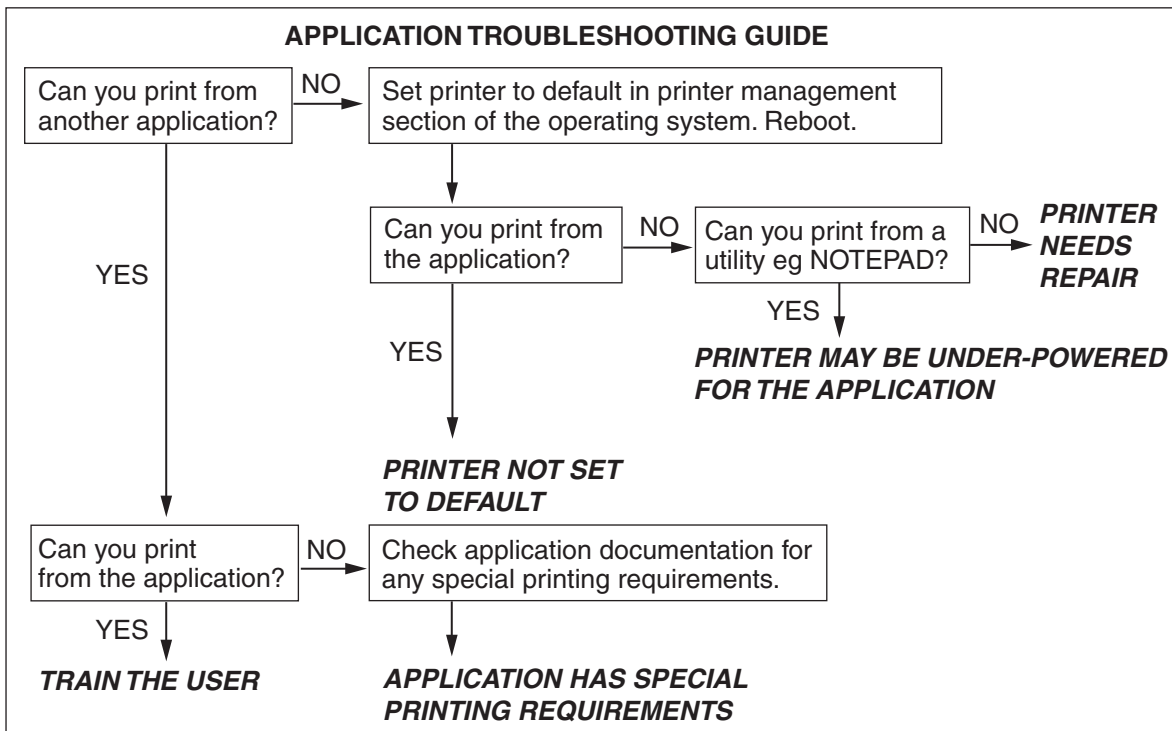
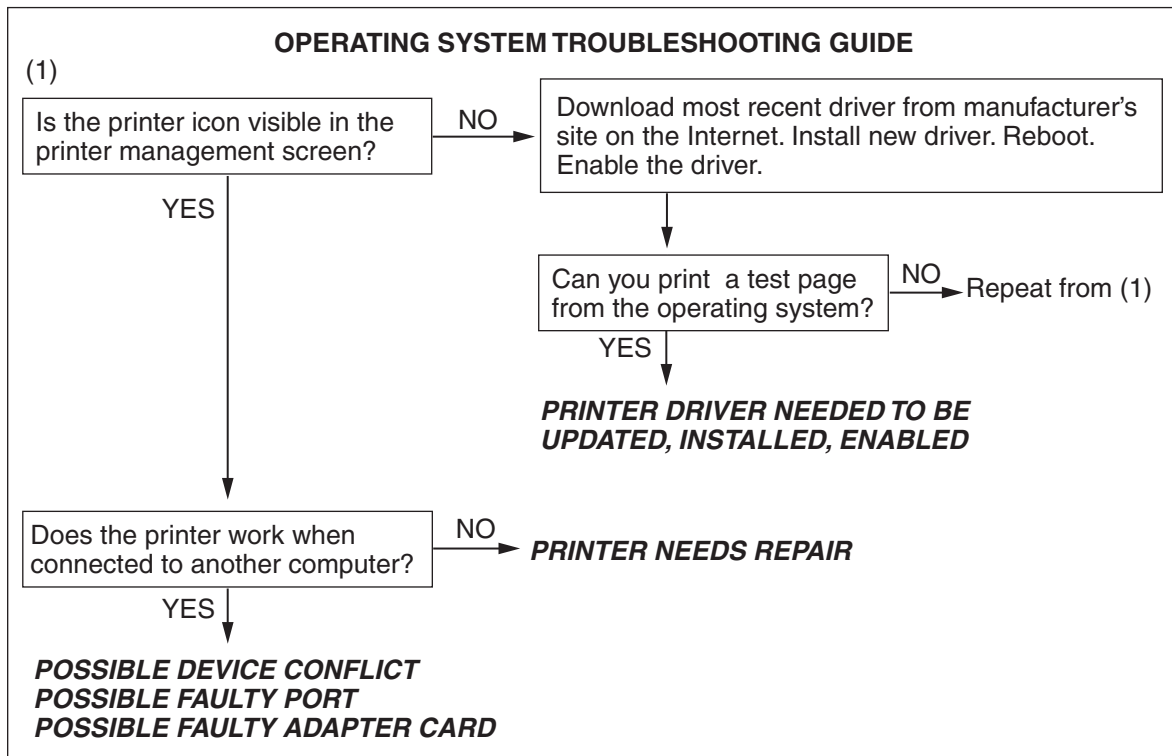
(ii) Use the appropriate guide from pages 14 and 15 to identify the problem. **1**

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Question 17 continues on page 15

Question 17 (continued)



Question 17 continues on page 16

Question 17 (continued)

- (b) The troubleshooting guides in part (a) do not refer to occupational health and safety. Identify and describe ONE occupational health and safety issue that should be included in the PRINTER TROUBLESHOOTING GUIDE. 2

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- (c) Outline the purpose of a device driver. 1

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- (d) (i) Describe the benefits to an organisation of having centralised storage for consumables such as laser printer cartridges. 2

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- (ii) Describe the benefits to an organisation of having an inventory of consumables such as laser printer cartridges. 2

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**End of Question 17**



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Section II (continued)


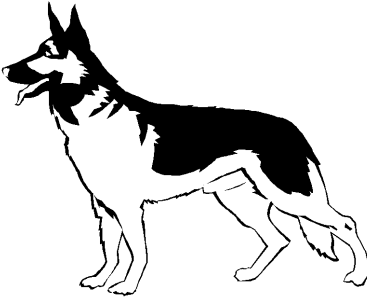
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Student Number

**Marks**

**Question 18** (6 marks)

You need to include some graphics in an electronic presentation on the World Wide Web. The software program you are using only allows the graphic file formats: JPEG, GIF and PNG. The following two graphics of the same resolution are very different. Suggest the most appropriate format to use for each graphic, and provide reasons for your choice.

<i>Graphic 1 is a full colour photograph</i>	<i>Graphic 2 is a black and white line diagram</i>
	

(a) *Graphic 1*

(i) Format ..... **1**

(ii) Reasons ..... **2**

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(b) *Graphic 2*

(i) Format ..... **1**

(ii) Reasons ..... **2**

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**Question 19** (6 marks)

- (a) Describe ONE issue that may arise when upgrading a software package from Version 5 to Version 10. 1

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Listed in Table 1 are the system specifications of a PC typical in your company. Listed in Table 2 are the recommended system requirements of a new version of the software package *BANK RECONCILE™* that your company is hoping to upgrade.

**Table 1**

System specification	
Operating System	Version 2
CPU Speed	200 MHz
RAM	64 MB
Hard disk space available	100 MB
Video Card resolution	1024 by 768
Installed Software <i>BANK RECONCILE™</i>	Version 5

**Table 2**

Recommended system requirements for <i>BANK RECONCILE™</i> Version 10	
Operating System	Version 2.5
CPU Speed	233 MHz
RAM	34 MB
Hard disk space required	50 MB
Video Card resolution	800 by 600

- (b) Outline ONE way in which your system does not meet the recommended system requirements. 1

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**Question 19 continues on page 19**

Question 19 (continued)

(c) Make TWO predictions about how the software will run on these PCs, and explain your predictions.

(i) Prediction ..... 2

Explanation .....

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(ii) Prediction ..... 2

Explanation .....

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**End of Question 19**

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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.

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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)

Design and draw a word processor template for a business letter which is to be printed on blank A4 paper. Explain the features you have chosen to include or exclude on your template. Analyse the impact that using templates will have on the operation of an organisation.

**Please turn over**

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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 have been appointed as a support officer to the System Administrator. Part of your new role is to implement and coordinate the backup of the file server. In the past, data has been lost, so the company has set up a new backup policy.

Assess the new backup policy, considering the additional information provided below. Draft a memo to your manager analysing both long- and short-term implementation issues.

**ABC COMPANY**

**Backup policy**

- 1 All data files from all applications shall be saved to the appropriate directory on the file server. No data is to be stored on local hard disks.
- 2 A full backup of data files will be performed every Saturday afternoon, after the close of trading at approximately 3.00 pm.
- 3 A differential partial backup of all data files will be done each week-day evening commencing at 9.30 pm.
- 4 A full backup of the system files and application files will only be done as required after major system changes.
- 5 All backups will be done as uncompressed data to tape.
- 6 A four-weekly cycle will be used.
- 7 Last week's backups will be kept off-site.
- 8 All backups on site will be kept in the fireproof safe in room B225 when not actually in use.

**Additional information**

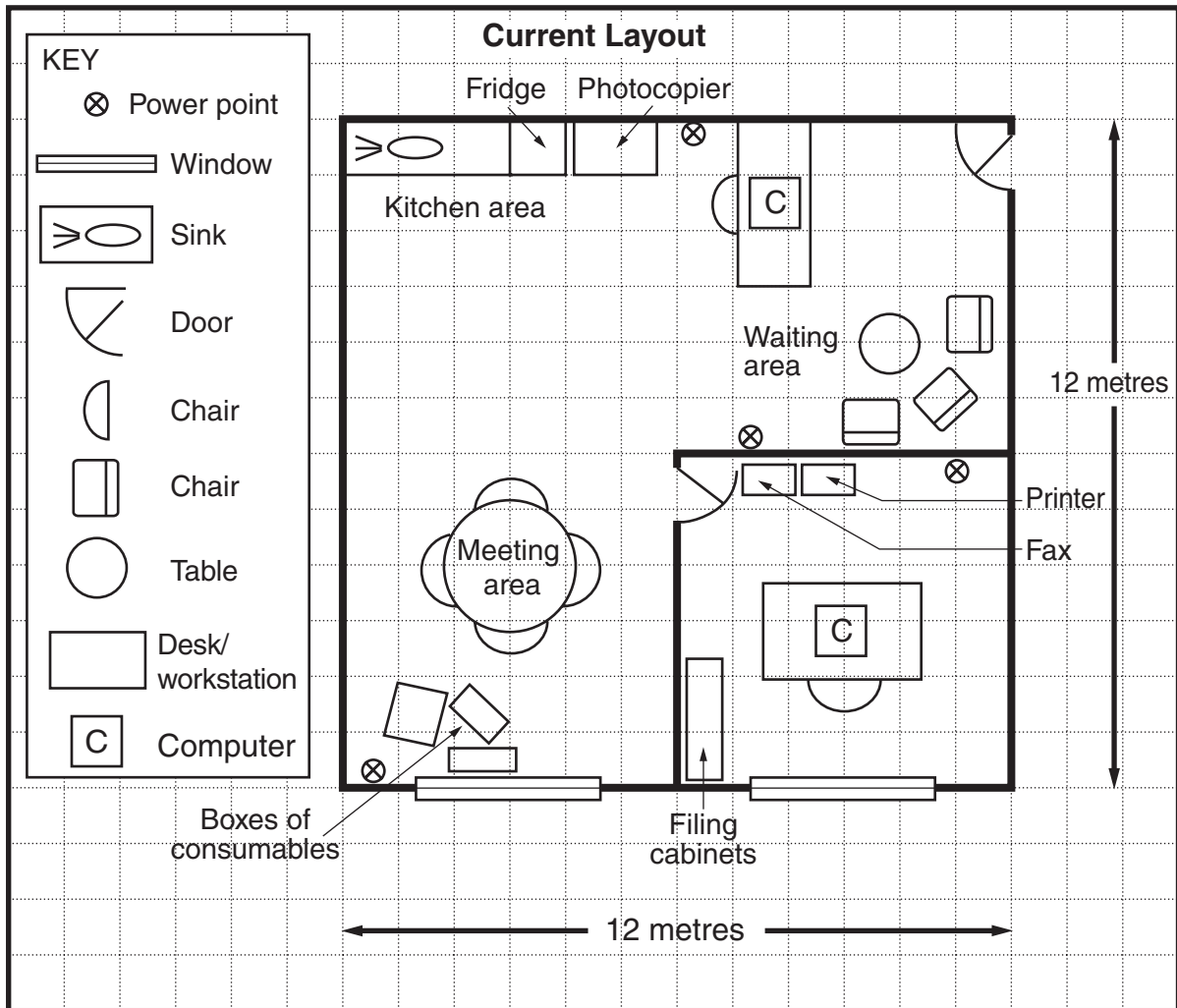
- A The server has an 80 GB hard drive.
- B The server is equipped with a tape drive with a capacity of 10 GB (uncompressed).
- C The hard disk currently has 5 GB of data and this is growing by about 1 GB each month.
- D 20% of all data files stored on the server change daily.

**Question 22** (15 marks)

Mr Matthews heads a marketing firm. He employs a receptionist and he outsources the firm's graphics work. His existing equipment includes:

- two personal computers
- networked black-and-white printer
- facsimile machine
- photocopier
- one dedicated dial-up Internet connection
- two incoming phone/fax lines.

The current office layout is shown in the diagram.



Mr Matthews decides to add a graphics department and employ two graphic artists. New workstations and equipment must be obtained and located in the current workplace.

Prepare a report which identifies the new computer and peripheral equipment and cabling required, and outlines the general hardware specifications for this equipment; and by completing the diagram on page 25, construct a new office layout which takes into account occupational health and safety principles.

Your report must account for the occupational health and safety principles which guided your decisions.

**End of paper**

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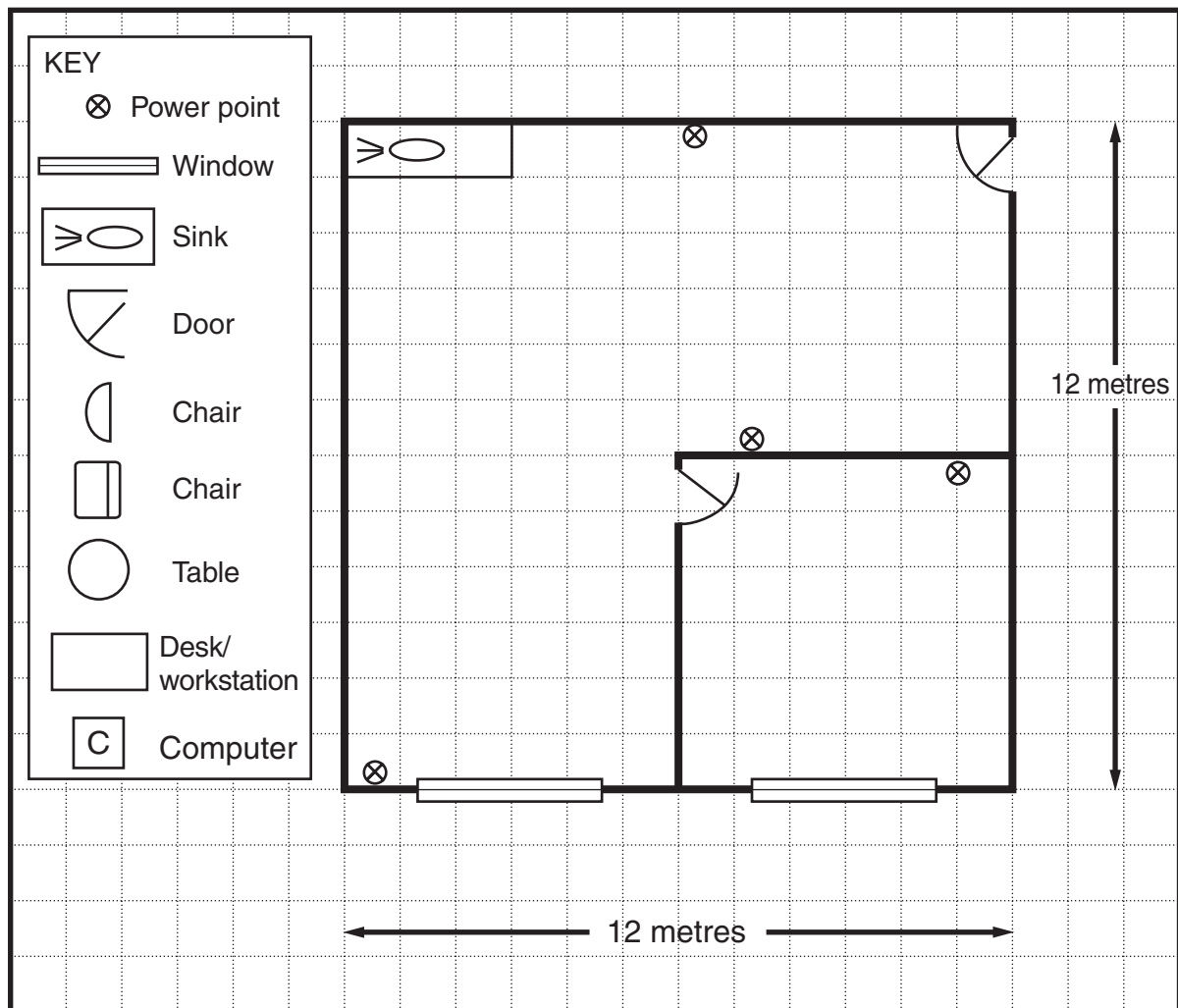
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This page is to be detached, completed and attached to the inside front cover of your writing booklet for Question 22.

**Question 22**



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