PSSC Computer Studies
1999 Finals – Marking Scheme

SECTION A: MULTIPLE CHOICE

1. Computers contain a **microprocessor**. A microprocessor is

C. a large scale integrated circuit made from silicon.

Concern: **Not a Prescribed Skill/Knowledge** I do not see microprocessor mentioned or sufficiently alluded to in the prescription with regards to the above solution. There is probable allusion to students understanding / learning about microprocessor in the context of the central processing unit (1.1.2) and data i/o. The allusions do not prescribe the knowledge required to correctly specify C as the answer.

Students may by elimination and guessing isolate the answer above but students are being unfairly assessed on skills / knowledge of which they were not appraised.

I consider this question extends beyond the prescription specifications.

2. A **mouse** belongs to which category ?

B. Hardware

3. **ROM** is used for storing

D. instructions for the start up sequence of a computer.

4. A **Hard Disk** stores information as a sequence of

B. magnetic dipoles.

5. A back-up should be created for **all** important files. This can be done by

D. copying the files onto a floppy disk or other external storage device.

6. A **menu** is a device that

A. issues commands to a computer.

7. You have a file called **test1** on a floppy disk. You use the operating system to **copy** it to the directory (folder) called **form6** on the hard drive. When you finish you will have

B. two separate files both called test1.

8. **Directories (folders)** let a computer operator

B. store files in a logical and ordered way.

9. Which structure shows the document **trees.doc** saved in the **forest** directory (folder) on the **a:** drive?

A. a:\forest\trees.doc

10. Software companies (like Microsoft) are the only ones permitted to copy and distribute their software. This is because they own the

A. copyright.

11. While using a word processor you highlight some text and choose **cut** from the **edit** menu. What happens ?

C. The highlighted text is removed from the screen and placed on the clipboard.

12. Which **tab** is needed to **correctly** align numbers in a column?

C. Decimal

QUESTIONS 13 TO 16

13. What is the entry in **Cell B2** known as?

A. Data

Concern: **Not a Prescribed Skill/Knowledge**: The correct answer (per prescription is **value**) students may have been unfairly disadvantaged through the use of a secondary term (data) which has a number of different connotations in othe applications. For example, A2 is data in a database but a label in spreadsheets.

The marking team should evaluate whether this is sufficient confusion for non English speaking students.

Reference: 2.8.3 identify cell types: Range: labels, values, formulae

14. If the **total tax** is to be calculated in cell C5, which of the following entries will do this correctly?

B. = SUM(C2:C4)

Although (D.) =C1+C2+C3+C4 seems like it would give the same result as B., it will give an error. =SUM(C1:C4) ignores the text values and adds only numeric value, this would have been the same as the correct answer (B) but is not a given option.

15. Cell C3 is copied and pasted to cell B5. What is the **actual entry** that is written to cell B5?

D. =A5*0.1

16. In this spreadsheet which cell contains an **absolute reference** to another cell?

D. No cell

QUESTIONS 17 TO 20

17. What are the **columns** and **rows** called in a **database**?

A. Fields and Records

18. The **ITEM** column is sorted in a **descending alphabetical** order. In what order will the items now be listed?

C. Desk, Chalk, Chair

I like this question. I think it was well chosen and correctly mixes characters to isolate whether students are guessing or know their sort specifications.

19. Why is a **database** used in this situation instead of a spreadsheet?

C. Because processing non-numeric data is the greatest priority.

20. What type of data is entered into the **QUANTITY** column in the database?

B. Numeric

SECTION B: SHORT ANSWERS *(80 marks)*

QUESTION ONE

(a) A school in the tropical South Pacific decides it must buy a computer. This computer will be used to help run the school. Write a list of **four hardware specifications** that the computer should have.

It would seem the question requires at least four from the possible list below:

Case, Motherboard, Keyboard, Mouse, Screen, Hard Disk, RAM, FDD, HDD, CD-ROM, Sound-card, speakers, network card (2 marks)

I don't quite understand the knowledge being assessed, but it seems the desire is to check which hardware components the candidate understands. Specifying what is "should have" is usually an individual choice and I have listed below the things which are on the specs of computers you can generally order either by mail, the internet, phone, or at a store.

(b) The school will keep a lot of its information on the computer.

(i) Which **computer device** is used for long term storage of information? (1 mark)

One of the following should be adequate:
Hard Disk Drive, Zip Disk, CD-ROM.

Long Term seems a little ambiguous (how long is long ?)

(ii) Describe one **physical** way that the stored information of question 1 (b) (i) can be damaged. (1 mark)

Media Damage. Some physical damage to the media, such as the Zip disk getting dirt on it or the cd-rom getting scratches.

Storage Organisation Damage. A magnetic field may change the data storage information on the hard disk without physically damaging the disk.

(iii) Information **cannot** be stored long term in RAM because RAM is volatile. What does **volatile** mean? (1 mark)

The most common use of volatile when referencing RAM (that I have come across) is when describing NVRAM (which is Non-Volatile RAM) a description/acronym used for EPROMs such as configuration settings on modems, network cards etc.

vol·a·tile (vòl¹e-tl, -tìl´) *adjective*

1. *Chemistry*. **a.** Evaporating readily at normal temperatures and pressures. **b.** That can be readily vaporized.
2. **a.** Tending to vary often or widely, as in price: *the ups and downs of volatile stocks.* **b.** Inconstant; fickle: *a flirt's volatile affections.* **c.** Lighthearted; flighty: *in a volatile mood.* **d.** Ephemeral; fleeting.
3. Tending to violence; explosive: *a volatile situation with troops and rioters eager for a confrontation.*
4. Flying or capable of flying; volant.

[French, from Old French, from Latin *volâtilis*, flying, from *volâtus*, past participle of *volâre*, to fly.]

— vol¹a·tile *noun*

— vol´a·til¹i·ty (-tîl¹î-tê) or **vol¹a·tile·ness** (-tl-nîs, -tìl´-) *noun*[1]
volatile memory (vol`e-tel mem'er-ê, vol`e-tìl) *noun*

1. Memory, such as RAM, that loses its data when the power is shut off.

2. Memory used by a program that can change independently of the program, such as memory shared by another program or by an interrupt service routine. *Compare* nonvolatile memory.[2]

Question: Is this an English Question?

Concern: Not a Prescribed Skill/Knowledge: Volatile means that the information in RAM storage is not 'stable' and not in a state that is consistent in and of itself. The application is that when electrical current becomes unstable, the data may be corrupted and when electrical power is lost then the information will be lost.

Concern: *Volatile* is a term that is not used in the prescription and is not necessary in teaching students that information stored in RAM is lost when power is lost. If the same question were asked except worded to determine whether students understood that information stored in RAM is lost, then more students should get correct responses.

I consider this question unfairly assesses students through use of terminology they may not be familiar with. In computer science, RAM does refer to volatile memory although Disk storage infrequently refers to non-volatile memory.

(c) The school buys the computer. When the Principal unpacks it the **back** of the machine looks like this.

Name the component whose lead should be connected to the socket labelled:

(i) **serial** (1 mark)
Modem, mouse, printer, digital camera.

Note that a modem already exists on the machine (or at least the ports are there) and it is still the case that a modem can be plugged into the serial port.

A mouse cannot be the only device for this response, as a mouse could be plugged into the PS/2 port, or the 25 pin serial port.

(ii) **parallel** printer, scanner, external drive (zip, floppy, cdrom, hard disk) (1 mark)

Note that the port labelled as parallel looks like a male port (which is more consistent with a serial port.) The female port, underneath the pointed 25 pin male port, would more probably be the printer port.

Most parallel printer cables use a 25 pin male DIN plug at the computer end, and a centronics connector on the printer side.

(iii) **230vAC** power-cable to screen/monitor (or double for speakers etc.) (1 mark)

Note: the diagram indicates 230V AC pointing at a female connector. This connector is not the connection to the power supply.

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[1]Excerpted from *The American Heritage® Dictionary of the English Language, Third Edition* © 1996 by Houghton Mifflin Company.

[2]*Microsoft® Bookshelf® Computer and Internet Dictionary*© 1997 Microsoft Corporation. All rights reserved.

There are number of different devices that can be connected to the plugs, and note that the diagram used is an IBM PC (platform) specific configuration. Macintoshes do not use the same printer port connectors, serial connectors, nor mouse connectors.

(d) The Principal decides to put the computer in the staff room so staff can use it.

(i) Explain why this room should be **air conditioned**. (1 mark)

Potential issues: (a) minimise dust (b) keep the environment cool (c) minimise humidity problems

(ii) Give two reasons why the Principal should also install a **UPS**.
(only two marks are provided, one per correct response. Below are listed alternative answers.)

1. Power fluctuations is a problem in Tonga, UPS caters for power drops/surges (1 mark)
2. Power failures do occur in Tonga, having a UPS gives the user time to save files(1 mark)
3. Solving power fluctuations in (1) also minimises damage to the computer

(e) The school's computer needs to store files relating to different aspects of the school. These include: the canteen; Principal's letters; school accounts; and subject departments. The Principal has letters coming **in** and going **out**. Subject departments are English, Mathematics, Science, and Geography.

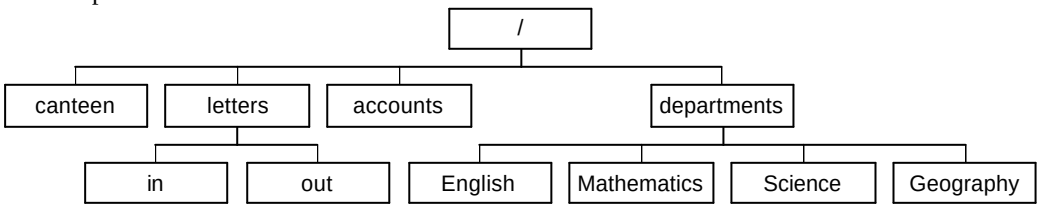
Concern: Not a Prescribed Skill/Knowledge This question requires describing, diagraming the storage hierarchical file system which is not a required component of the Form 6 PSSC examination. Students are required by the prescription to know how to navigate the hierarchical file system, especially knowing how to find a file within the system but the prescription does not specify students need to draw diagrams or understand the special 'root' folder.

Note that there should be a good number of students who should be able to respond to these questions correctly from their Form 5 Prescription requirements.

I cannot see where in the PSSC 1997 Prescription where these questions may have been obtained. These below questions are explicitly covered in the Form 5 Prescription/Examinations and good for Form 6 students but is not covered in the prescription.

(i) Draw a suitable **directory (folder) structure** for this school. Include the root directory (folder) in your diagram. Draw your diagram in the space below. (3 marks)

A tree diagram is shown below, and it may also be set on its side similar to how students are used to seeing it in Windows Explorer or the Macintosh Finder



(ii) The Mathematics Department saves a file **test.doc** on the computer. Write the complete path, **according to your diagram** in question 1 (e) (i), for the best place to store this file.

/departments/Mathematics

The response will be dependent on how the students have created their tree (named their folders/directories) (1 mark)

(iii) The file **test.doc** is still open. Describe how you would **copy** this file to a floppy disk without closing it.

One standard approach is to use the File | Save As … facility in the application to save the file to a new location (the floppy disk.)

(1 mark)

QUESTION TWO

A school in the South Pacific purchases a new computer. The computer is delivered to the school with its **operating system** already installed.

(a) (i) What is an **operating system**?

Software designed to control the hardware of a specific data-processing system in order to allow users and application programs to employ it easily.[3] (2 marks)

Another approach to answering the question is to state that an operating system is a set of computer programs with the following functions. Memory Management, Storage Management, Process Management, Device Management.

(ii) **Name** one operating system.

A list of possible answers for this question includes: MS-DOS, Microsoft Windows 9x (95 or 98,) Microsoft Windows NT, MS Windows 2000, Linux (or Unix), Macintosh OS, MVS,VMS, OS/2 Warp, OpenBSD, BSD, FreeBSD, NetBSD, OS9 (1 mark)

(iii) **Describe** how the Principal would use the operating system to **copy** a file from the hard drive onto a floppy disk.

The answer would be dependent on the operating system selected, the below are some sample answers:

MS-DOS: copy original_file a:

MS Windows: Start Windows Explorer ✍ Find and select the file ✍ Drag the file to the floppy disk

Mac OS: Double Click on the Drive to open the drive ✍ Find and select the file ✍ Drag the file to the floppy disk

(1 mark)

(b) The **internal clock** on the computer was not set to the correct local time when it was delivered. Describe how the clock could be adjusted to the correct time.

The answer would be dependent on the operating system selected, the below are some sample answers:

MS-DOS: date new_date
Time new_time

MS Windows: Double Click on the Time on the task bar ✍ Change the time

Macintosh OS: Click on the Apple Menu ✍ Select the Control Panel ✍ Select the General Options ✍ Change the time
(1 mark)

(c) The following day the Principal turns on the computer. An error message appears that says the computer is trying to boot from a **Non System Disk.** The computer stops its boot sequence and waits.

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[3]Excerpted from *The American Heritage® Dictionary of the English Language, Third Edition* © 1996 by Houghton Mifflin Company.

(i) What is causing the problem?

There are at least two possible answers:
(a) A non system disk has been put into the floppy drive
(b) The startup files for the operating system are not on the hard disk
(1 mark)

(ii) If the fault is not corrected, what would happen if the computer was re-started using a **warm reboot**?

The same problem would occur. (1 mark)

(iii) How can the Principal correct the error that is causing the error message?

If the problem is a non-system disk in the floppy, then the solution is to remove the disk and hit the enter key or restart the machine.

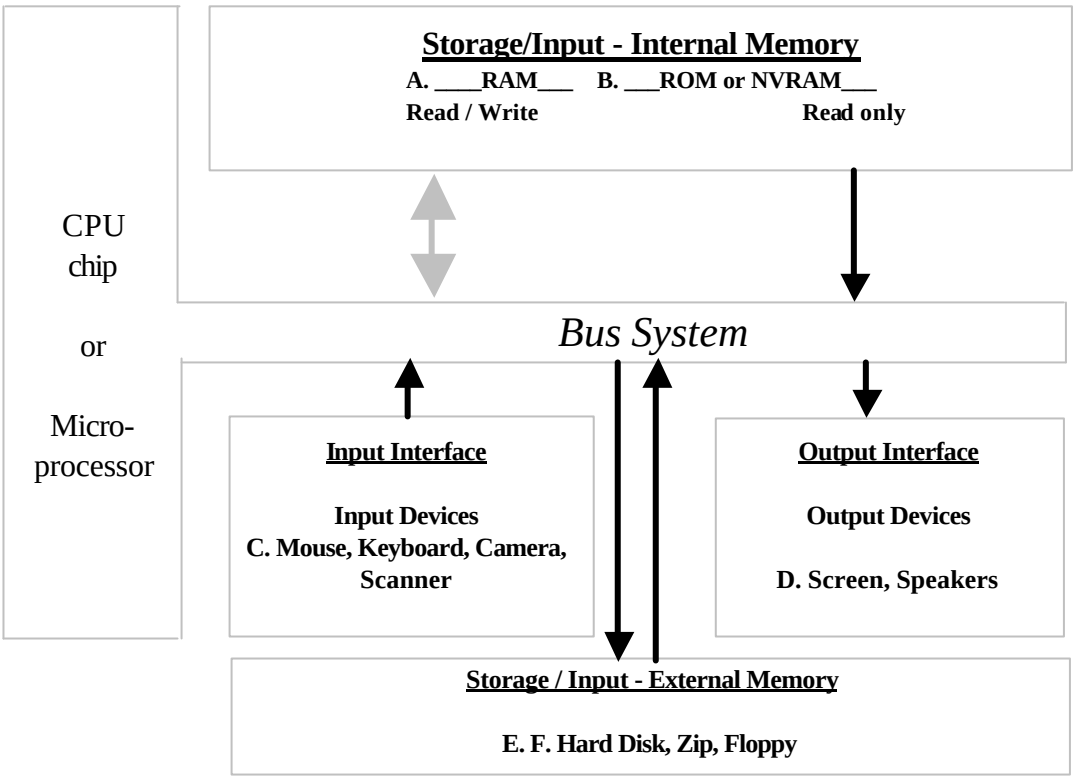
If the problem is lost OS start up files, then it may require reinstalling the OS
(1 mark)

(d) The Principal gets the computer working properly and then uses a CD-ROM encyclopedia to do some research about computer systems.

(i) What does **CD-ROM** stand for?

Compact Disk – Read Only Memory (1 mark)

(ii) The Principal finds a diagram in the encyclopedia about computer systems. This diagram is shown below, **but it is not complete.** Read the diagram below and **fill in each of the spaces labeled A to F** with the name of **one** item that fulfills that category. (3 marks)



(iii) The arrow on the diagram shows how information flows between two parts of the computer. Draw in **four more arrows** on the diagram to show how information flows between the bus and the other parts of the computer. (2 marks)

(e) The Principal wishes to make a **bootable disk** for the computer. Describe how this can be done with an **unformatted 3.5" floppy disk**.

MSDOS – format a: /s
Windows: Start | Settings | Control-Panel | Add/Remove Programs | Start Up Disk | OK
Macintosh OS: ?
(2 marks)

QUESTION THREE

A school in the South Pacific buys a new computer. The school then starts to use this new machine.

(a) One day a staff member tries to save a file onto his own floppy disk. Suddenly this message appears on the screen:

> Warning: the boot block of the floppy disk in the floppy drive is infected with the *appolyon* virus!!

(i) What type of **application** produced this message?

Anti-virus program
(1 mark)

(ii) **Describe** one thing the staff member can do to remove the *appolyon* virus.
Option 1. Use the anti-virus program to remove the virus.
Option 2. Format the floppy disk with the /s option (eg. format a: /s) (1 mark)

(iii) Describe **one advantage** of the removal method you described in question (3) (a) (ii).

Option 1. You can still use the disk and retrieve other files on the disk.
Option 2. It removes any and all viruses, including viruses that may have infected other files on the floppy disk (1 mark)

(b) The school makes a policy that it will **not** allow any **pirated software** to be used on its computer.

(i) Explain what **pirated software** means.

Software that has been illegally copied. Copies made without the consent, approval of the owners of the software.
(1 mark)

(ii) Give **two reasons** why a school might make such a policy.

Possible answers may include: It is illegal (although not enforced) to copy software in Tonga; It is ethically not right to take someone else's work with out compensating that person/organisation for the effort they placed into creating that work.

Note: This is an interesting question, as it requires interpretation by students of the information (ethics) taught to them..

(2 marks)

(c) When buying the computer the school was supplied with a **printer** and associated **printer driver** on disk. They looked like this.

(i) Circle the picture of the item that contains only **software**.

The floppy disk should be circled.(1 mark)

(ii) Explain why the software in question 3 (c) (i) is **system software**.

By the definition for operating systems, provide functionalities for communicating with devices for applications, printer drivers are system software because they provide system level services for all applications. (1 mark)

(d) The Principal creates a message using a **wordprocessor**. Here is the message. **It is shown actual size**.

(i) Describe **one difference** in the fonts used in the message.

The heading has these different font formatting: underlined, a serif font
The messager has these different font formatting: font is 'decorative' or 'cursive'(1 mark)

(ii) The first paragraph is double spaced. What **line spacing** did the Principal use in the second paragraph?

It looks like 1½ line spacing (1 mark)

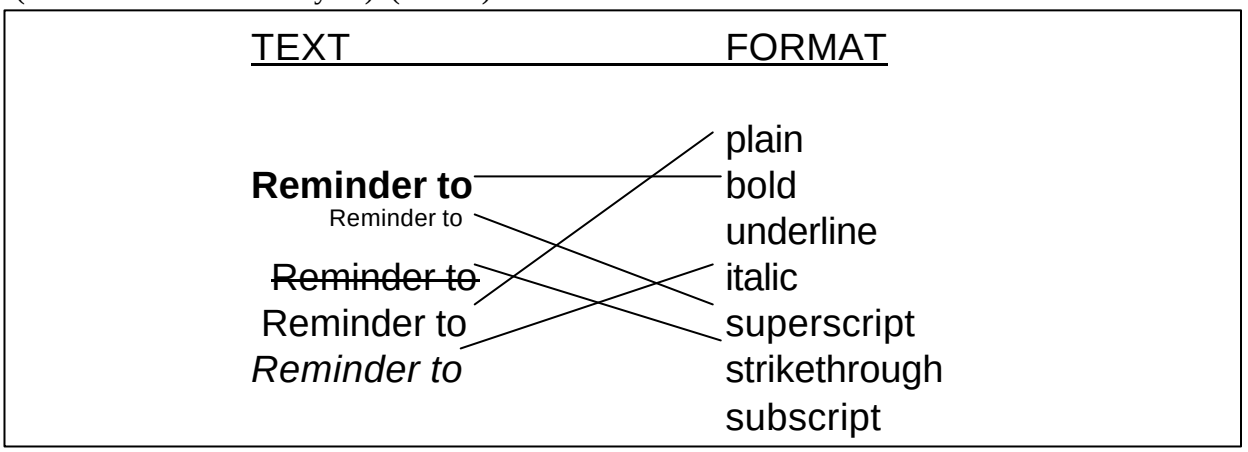
(iii) When the Principal runs the **spelling checker** on her document what message appears?

It should at least show that libbrary is misspelled, and should probably give a suggestion that 'library' is the correct spelling (without the quotation marks.) (1 mark)

(iv) Describe the paragraph **formatting** that has been applied to the first paragraph.

Two noteable paragraph formatting is: double line spacing, and centering. (2 marks)

(v) The Principal experiments with the format of the message. She adjusts the look of the words "**Reminder to**". In the table below draw a line from the text to the correct **format** description. (The first one is done for you.) (1 mark)



(vi) How can you tell that **centre** formatting has been applied to the diagram in the message?

Visually it is difficult to verify with certainty the above suggestion. One can say that the pictures visable edges seem to be evenly spaced from the borders (which is not really an indicator that the image file ends with the visable edges) (1 mark)

(vii) Explain why the message should be saved **before** attempting to print it.

It is always a much safer thing to save files before you continue with new work (such as printing.) Other reasons you may save before printing ? Possible problems with printing may cause problems with the document ?(1 mark)

QUESTION FOUR

A school in the South Pacific buys a new computer.

(a) The school canteen decides to keep its business records on a **spreadsheet** on the computer. The canteen sells bags of peanuts for 20 cents each. These bags of peanuts cost the canteen 7 cents each. On the chart below show the **entries** in a spreadsheet that could be used to calculate the profit for each bag sold. Make sure you label the entries correctly.

(3 marks)

	A	B	C	D
1	**Item**	**Cost**	**Sale Price**	**Profit**
2	**Peanuts**	**0.07**	**0.20**	**=C2-B2**
3				
4				

(b) The canteen keeps a record of the number of bags of peanuts sold each day for a week. Here is the information as it appears on the screen of the computer in a spreadsheet application:

(i) Describe the **function** that is entered into **cell B8**.

Description: The function should add the values above it. Potential Function(s): =SUM(B2:B7) (1 mark)

(ii) Write down a suitable **entry** that will give the required answer in **cell B9**.

=AVERAGE(B2:B7), or AVERAGE(B3:B7)
=SUM(B2:B7)/COUNT(B2:B7), or SUM(B3:B7)/COUNT(B3:B7)
=SUM(B2:B7)/5, or (B3+B4+B5+B6+B7)/5(2 marks)

(c) The canteen also keeps a record of the number of ice blocks sold. Here is the information:

Mon 15; Tue 12; Wed 21; Thu 19; Fri 1121.

i) Which number is probably **incorrectly** recorded?

Fri: 1121 (1 mark)

(ii) Explain **why** you think this number is wrong.

Some description about how the number is significantly different from the other sales.

Of course, a student might say any of the other numbers are reasonable as wrong depending on the argument put forth. For example, Friday may be legitimate because all the netball finals were being held at the school and the canteen had exclusive rights for peanuts at the school, and Monday could not have sold 15 because this was a public holiday and the canteen caretaker did not come to school with the key for the canteen. (1 mark)

(c) The canteen soon expands its spreadsheet to include other sales. Here is the expanded sheet:

(i) Explain why the numbers shown in the spreadsheet are formatted with zero decimal places.

Comment: It seems this canteen does not sell half units (1 mark)

(ii) The formula

=max($B$3:$B$7)

is entered into cell B10. It is then spread across to cell E10. What **value actually appears** in cell E10?

40 (1 mark)

(iii) Write down the correct formula that should have been placed in **cell B10** in the first instance.

=MAX(B3:B7) (1 mark)

(iv) Explain the difference between **absolute cell references** and **relative cell references**.

Absolute Cell Reference fixes the reference to a specific cell (row/column) even when the formula is copied to other areas of the spreadsheet.

Relative Cell References sets the reference to a cell (row/column) and when the formula is copied to other areas of the spreadsheet the relative cell reference is changed according to the change (relative) from the source location of the copy command, and the destination location of the paste command. (1 mark)

(e) The canteen calculates its profit for the week by entering some calculations at the bottom of the spreadsheet. These are shown in the diagram below.

The formula

= B8 * B11

is entered into cell B12, as shown. This is then spread to cell E12.

(i) On the spreadsheet on page 18 draw **one rectangular box** around **all** the cells that should be **formatted as currency**.

The box should be drawn around the range B11:E12.

Note that extending this range from A10 to E13 has no detrimental effect on the desired solution and could be considered a correct response so long as the specified area covers the required range B11:E12.(1 mark)

(ii) What format has been applied to the **labels** in the spreadsheet?

Two formatting options seem to have been made: Bold, and Centered (1 mark)

(iii) Suppose the profit on each sale of peanuts can be increased by 2 cents if a different supplier is used. Describe how the canteen could run a **what-if analysis on their spreadsheet** to find the new weekly profit.

1 save the file
2 add 2 cents to each Profit per sale (B11:E11) (1 mark)

(iv) Describe how the canteen could use the spreadsheet to create a **pie graph** showing how each product contributes to the weekly profit.

1. Highlight A12:E12 – this selects the label and the range of figures to chart (all weekly profit)
2. Select the chart wizard (or select Insert Chart …, or hit the F11 key)
3. Select the Pie chart format and select other options you may desire

(1 mark)

QUESTION FIVE

A school in the South Pacific buys a new computer to help run the school.

The Head of Science puts information about the Science Department's equipment into a **database** on the computer.

(a) (i) Describe **one advantage** in using a database for such a task.

At least these potential advantages may be specified:
Tables – allow for all data to be stored, and tables are easily modified when new categories (fields) need to be included in a record.
Editing – adding and removing new information is simpler in an electronic database than in separate collections of lists.
Queries – allow for custom views of the database, for example we can list only those records for the Chemistry classes.
Reports – allow for custom reports on the data (combined with the use of queries)
Data Integrity – by having all the data in a single location it is easier to ensure the entered data is correct
Data Security - restrictions can be set up so only those with the need to know can access certain areas of the data. For example, only department heads can make changes to the records.
Data Sharing – the information can now be easily accessed and usuable to many different people without the need to print a new copy everytime something changes.
(1 mark)

(ii) On the table above draw a rectangle around any **one complete record**.

The answer should be a rectangle around a complete row, and the answer cannot be the title row, or field headers.
(1 mark)

(iii) Based on the table above what size should the **Subject** field be?

At least 9 but the student could put in something like 16 if they considered that Computer Studies would be part of the Science department. Any number above nine could potentially be a valid response.

If the question had specified 'minimum size' then the response must be "9" (1 mark)

(iv) What type of field is the **Quantity** field?

Number – Integer, or Long Integer. It could be Single, or Double but this would be a wasteful selection.

If the questions sepcified 'what type of field should it be' then the answer must be Number/Integer as this is the appropriate field size for the organisation use and data collection.(1 mark)

(v) If the **Date Purchased** field is sorted in ascending order which **Item** appears at the top of the Item field?

21 Jun 79 (1 mark)

(b) (i) The Head of Science wants a hard copy of all Physics equipment listed in alphabetical order. Describe the three steps needed to achieve this.

1. Create a query listing the fields: Subject, Item
2. Set criteria for Physics, so only Physics shows up in the Datasheet View
3. Create a report from the query, specifying to sort the Item in alphabetical order
4. Print the report

1. Create a query listing all fields
2. Specify a Criteria of Physics and set the Query to sort by Item

3. Print the Data view of the Query
(3 marks)

(ii) Use only the information given in the table on page 20. Write down **one** possible way the report of question 4 (b) (i) could look.

Alphabetical – Ascending
10,Physics,Spring,10,12-May-94
9,Physics,Tickertimer,5,1-Feb-85
8,Physics,Trolley,2,9-Oct-96

Alphabetical – Descending
8,Physics,Trolley,2,9-Oct-96
9,Physics,Tickertimer,5,1-Feb-85
10,Physics,Spring,10,12-May-94

(1 mark)

(c) The Head of Science wants to find all the **Chemistry equipment** that is stored in Room 9. To do this she applies these conditions to the database:

Subject = "Chemistry" AND Room = "9"

(i) Explain what the **logical AND statement** does in this situation.

Requires that both conditions are true before it will allow the record to be listed. (1 mark)

(ii) How many records **from the table shown on the previous page** are selected by this query?

1 (1 mark)

(d) The Head of Science wants to know if any equipment is older than 15 years. **Describe** in general how this could be done using the database she made.

A query that lists all fields with a criteria that has < "Date" where the "Date" is some date 15 years from the current date.
(1 mark)

(e) The Head of Science needs to find all the equipment purchased in 1998. She gets an appropriate **report** from the database. This is what the report looks like:

(i) Explain why the report has **only three fields** in it.

The report, or query only specified three of the fields to be displayed. (1 mark)

(f) Databases can be useful in many real-life situations.

(i) **Name** one database program.
Note: Technically this is an ambiguous question as it does not clearly specify whether we are asking for a program that creates databases or a database, both can be referred to as database programs.

Program that creates databases: Microsoft Access, Microsoft Works, Microsoft Fox Pro, IBM Lotus Approach, Corel Paradox, SQL, DB2

Database: Telephone directory, Point of Sale system, etc. (1 mark)

(ii) Give **one example** where a database would be a useful tool to employ.

Examples: Point of Sale or Counters at Morris Hedstrom or TCF, … (1 mark)

(iii) Explain **why** it is important to keep data in a database **up to date**.

Data is most valuable when it is accurate, inaccurate data/information will soon be ignored by users etc. (1 mark)