AQA Computer Science A-Level

4.6.1 Hardware and software

Past Paper Questions

Additional Specimen AS Paper 2

0 6 There are four types of system software. The operating system is one type.

Name the other **three** types, and describe the role of all **four** types. Use examples to illustrate your descriptions.

[6 marks]

January 2009 Comp 2

1 (a) What is meant by *hardware*?

.....

.....

(1 mark)

1 (b) What is meant by *software*?

.....

.....

(1 mark)

2 **Table 1** lists a number of items of software. You are asked to show which software category each item belongs to.

Write in the appropriate cells in **Table 1** the letter of the category which best fits each item of software. No letter should be used more than **once**.

Table 1

Software	Category (letter only)
Spreadsheet Software	
Anti-virus Software	
Operating System	
Air Traffic Control Software	

(4 marks)

A – System Software

B – Bespoke Software

C – Utility Software

D – General Purpose Software

E – Special Purpose Software

3 (b) (i) What type of translator is required to translate assembly code statements into machine code?

.....

(1 mark)

3 (b) (ii) What type of translator is required to translate a high-level language statement into machine code?

.....

(1 mark)

January 2010 Comp 2

6 There are three different types of application software. General purpose is one type.

Name the other **two** types, and describe all **three** types. Use examples to illustrate your descriptions.

In your answer you will also be assessed on your ability to use good English, and to organise your answer clearly in complete sentences, using specialist vocabulary where appropriate.

(6 marks)

January 2011 Comp 2

6 (a) One type of software can be described by the phrase "*performs tasks needed to operate the hardware*".

What type of software is being described?

.....

(1 mark)

6 (b) (i) Explain what is meant by *general purpose application software*.

.....

.....

(1 mark)

6 (b) (ii) Give **one** example of general purpose application software.

.....

(1 mark)

6 (c) An IT manager needs to buy software to manage stock control.

6 (c) (i) Why might the manager choose a special purpose application package rather than a bespoke solution? Give **two** reasons.

1 .....

.....

2 .....

.....

(2 marks)

6 (c) (ii) Although special purpose application packages for stock control are available, explain why the IT manager might choose to order a bespoke piece of software.

.....

.....

(1 mark)

January 2013 Comp 2

1 A computer system is made up of *software* and *hardware*.

Explain what is meant by these two terms.

.....

.....

.....

.....

(2 marks)

June 2010 Comp 2

1 (a) Define the following terms.

1 (a) (i) Hardware: .....

.....

(1 mark)

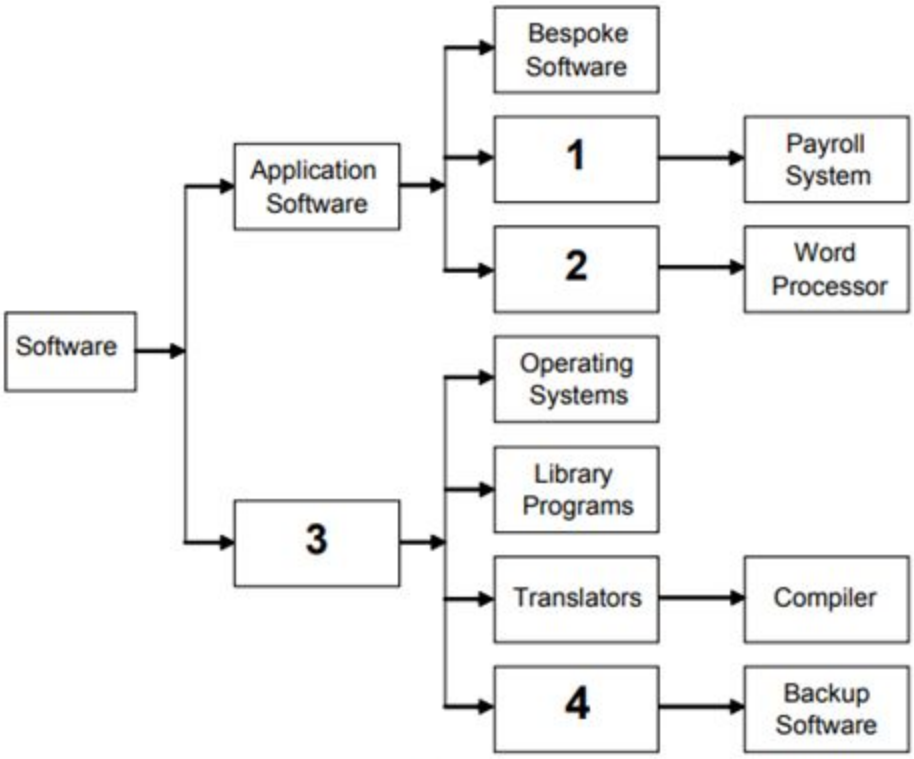
1 (a) (ii) Software: .....

.....

(1 mark)

1 (b) The diagram in **Figure 1** shows the classification of various types of software used on a computer system and some examples of these types.

Figure 1



Complete the labelling of **Figure 1** by suggesting labels for 1 to 4 in the diagram.

1 ..... 2 .....

3 ..... 4 .....

(4 marks)

June 2011 Comp 2

1 Software can be categorised as either system software or application software.

1 (a) The table shown below lists three different examples of application software.

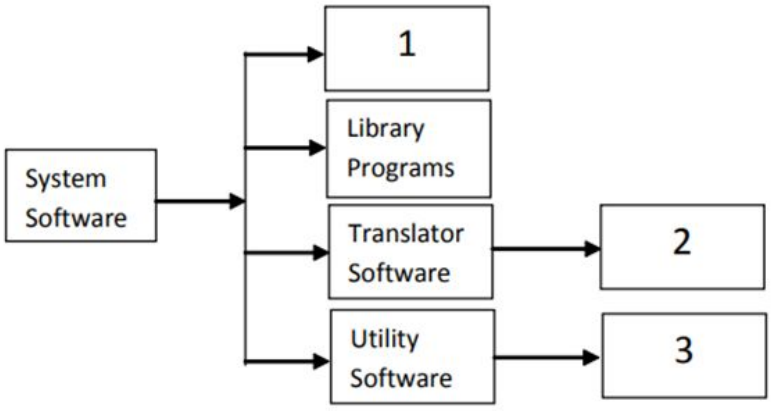
Put **one** tick in each row of the table to show which category each software program belongs to.

	General Purpose Software	**Special Purpose Software**	**Bespoke Software**
Word Processor			
Payroll Software			
Flight Control Software			

(3 marks)

1 (b) **Figure 1** shows an incomplete classification of system software.

Figure 1



Suggest suitable labels for boxes **1** to **3** in **Figure 1**.

1 .....

2 .....

3 .....

(3 marks)

June 2012 Comp 2

1 (a) **Table 1** below lists some components of a computer system.

Put **one** tick on each row to identify each component as either:

- software
- hardware
- hardware and software.

Table 1

Component	Software	Hardware	Hardware and software
Wireless router			
Compiler			
Keyboard			

(3 marks)

1 (b) System software performs the tasks needed to operate the hardware. The operating system and library programs are system software.

1 (b) (i) State **one** role of the operating system.

.....

(1 mark)

1 (b) (ii) State **one** purpose of library programs.

.....

(1 mark)

1 (c) A company is looking at purchasing some bespoke software to help them run their ordering and purchasing activities.

1 (c) (i) State **one** advantage of purchasing bespoke software.

.....

.....

(1 mark)

1 (c) (ii) State **one** disadvantage of purchasing bespoke software.

.....

.....

(1 mark)

June 2012 Comp 3

1 An operating system is designed to hide the complexities of the hardware from the user and to manage the hardware and other resources.

Give **three** different types of management of either hardware or other resources that are performed by an operating system.

1 .....

.....

2 .....

.....

3 .....

.....

(3 marks)

June 2013 Comp 2

7 (e) The process of writing reports and then allowing access to these reports via the parent portal involves the use of many different categories of software.

Below is a list of different categories of software:

Operating system, Utility program, Special purpose application software, Bespoke application software, General purpose application software

Complete **Table 1** by writing the correct category from the list above in the **Category** column next to the appropriate **Software**.

You should **not** use a category more than once.

Table 1

Software	Category
Word processor used to write the pupil reports	
The parent portal web application which was programmed for this school	
The web server software run by the school	

(3 marks)

June 2009 Comp 2

5 (a) Explain the difference between application software and system software.

.....

.....

.....

.....

(2 marks)

5 (b) Utility programs are one type of system software.

Name **two** other types of system software.

1.....

(1 mark)

2.....

(1 mark)

5 (b) Utility programs are one type of system software.

Name **two** other types of system software.

1.....

(1 mark)

2.....

(1 mark)

Specimen AS Paper 2

0 5 The OpenSSL project is a collaborative effort to develop a general purpose cryptography software library for encrypting data transmissions.

In April 2014, a bug known as the 'Heartbleed Bug' was found in the OpenSSL software library. The bug allowed anyone on the Internet to access the memory of systems protected by the vulnerable versions of this OpenSSL software.

According to web server statistics, this bug could have affected around 66% of known web servers.

0 5 . 2 OpenSSL is an example of open source software and so its source code is freely available for inspection.

Describe **two** benefits of having the source code of software publicly available.

[2 marks]

0 4 The phrase "Internet of Things" is used to describe the connection of many everyday devices such as home heating controls, utility meters, cars and environmental sensors to the Internet. It is believed that tens of billions of devices will be connected to the Internet of Things by the end of the decade.

One anticipated use of the Internet of Things is to monitor the food that consumers have inside their fridges. This data could be gathered automatically from consumers' devices by retailers who sell food. Retailers could use the data to analyse consumer consumption habits or automatically prepare deliveries for customers.

In the context of an Internet connected fridge, discuss the technologies that will be required to make the Internet of Things work.

You may wish to consider how the data might be captured, how networking technologies are changing to provide the necessary infrastructure, and how the data gathered by retailers could be stored and processed, from a hardware and software viewpoint.

[12 marks]