Ch3

Hardware

CHAPTER ASSIGNMENT · 40 MARKS

Name _____ Class _____ No. _____ Date _____

Answer every question in the space given. Show your working. You may use the chapter page to help you.

Questions from *Computer Science for Cambridge International AS & A Level Coursebook*, 2nd edition, Sylvia Langfield and Dave Duddell (Cambridge University Press), for classroom use.

Tasks and questions from the chapter

DP **Discussion Point:** How might useful information from an embedded system installed in a domestic appliance be communicated over a network to the owner of the appliance?

DP **Discussion Point:** Can you find out what memory components are in the computer system you are using and any details about them such as the type and storage capacity?

Q3.01 Can you think of examples of data transfer that would need a buffer?

EQ3.01 **Extension Question 3.01:** Carry out some research into the technologies currently available for storage.

Consider first the options available for the storage device inside a laptop computer. Create a table showing cost, storage capacity and access speed for typical examples. Then consider the options available for peripheral storage devices. Create a similar table for these.

Can you identify which technologies remain viable and which ones are becoming uncompetitive? Are there any new technologies likely to come into common use?

EQ3.02 **Extension Question 3.02:** Consider the different possibilities for interacting with a screen display. Create a table showing the advantages and disadvantages for each technique.

DP **Discussion Point:** Investigate which flat-screen technologies are used in any computer, laptop, tablet or mobile/cell phone that you use. Discuss the benefits and drawbacks associated with their use.

RP **Reflection Point:** The description 'peripheral' is often used to describe devices that can be connected to a computer. In your research did you come across the word being used? Is it a useful one or is it possibly not so because of the lack of a clear definition?

Exam-style questions

1

(a) A typical computer will have RAM and ROM.

(i) Describe two differences between RAM and ROM. [4]

(ii) Name one similarity between RAM and ROM. [1]

(iii) RAM may be either DRAM or SRAM. Explain the difference between these. [2]

(b) Secondary storage can be magnetic, optical or solid state.

(i) For each type of storage identify one feature of the basic internal operation which is different from that of the other two types. [3]

(ii) For two of the three types of storage identify two similarities in the basic internal operation. [2]

2

(a) Pressing a key on a computer keyboard can cause a character to be displayed on the computer screen.

(i) Identify **four** aspects of the basic internal operation of a keyboard that makes this happen. [4]

(ii) Describe an alternative method for a user to enter some text into a computer system. [2]

(b) **(i)** In the operation of a laser printer there are a number of initial stages which lead up to the creation of a full-page electrostatic image. Identify **three** of these stages and present them in the order that they would occur. [3]

(ii) Identify **two** of the stages that make use of this electrostatic image. [2]

(iii) State the difference in the procedure used for colour printing from that used for black and white printing. [1]

3

(a) Describe the operation of a touch screen technology that can be used in association with any type of computer screen. [4]

(b) Describe the operation of a touch screen technology that is only applicable for use with a flat screen. [4]

4

(a) Examples of primary and secondary storage devices include: [3]

- hard disk
- DVD-RW
- flash memory

For each device, describe the type of media used.

Device	Type of media used
Hard disk	
DVD-RW	
Flash memory	

(b) Describe the internal operation of the following devices:

DVD-RW

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5

(a) Describe **two** differences between RAM and ROM. [2]

(b) State **three** differences between Dynamic RAM (DRAM) and Static RAM (SRAM). [3]

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End of assignment · Check your answers against the chapter at gurujazzy.com/subjects/computer-science/as-a-level/hardware/