

Year 9

Homework 1: What is a computer System?

1) In the table below are listed several ways of inputting data to a computer and several input devices. Associate each inputting way with its corresponding device.

Way of inputting data	Device
a) Typing	i) Mouse
b) Moving a pointer on the screen and clicking.	ii) Camera
c) Touching a surface	iii) Keyboard
d) Speaking	iv) Touch screen
e) Making gestures	v) Microphone

2) Name three output devices.

3) Fill in the following sentences with the appropriate term. The terms are the following: store, Internet, processing, and network.

- In between input and output the computer performs _____.
- A computer can also be connected to a _____. Many personal computers today are connected to the _____.
- The computer can store information in its _____.

4) State the definition of the computer.

5) Consider the following tasks related to the computer: input, processing, output, storing and retrieving. Which of these tasks is being performed in the following sentences (the first one is done for you)?

- The user opens the Calculator program. (retrieving)
- The user enters $33/11+6$, then presses 'Enter'.
- The calculator program works out the value of the expression.
- The calculator program displays the result on the screen.

Homework 2: Main Modules of a Computer

1) State whether the following actions are (i) input, (ii) processing, (iii) output or (iv) communicating with the network.

- The expression $3+1.7$ is calculated.
- The user enters his age.
- An email is sent
- The computer displays a picture on the screen.
- A webpage is downloaded on your computer.

- f) The number of words in a document is calculated.
- g) The user chooses an option by touching the screen.
- h) Music is played in the speakers of the computer.

2) Say whether each of the following statements is true or false:

- a) When you open a program a copy of the program goes from secondary storage to primary storage.
- b) Primary memory can execute programs.
- c) The pen drive is one example of secondary storage.
- d) If you are typing a letter and you save it will be copied to primary storage.

Homework 3: The Computer System, Computer Logic and Binary Numbers

1. Name three input devices.
2. Name three output devices.
3. Give two examples of what computer processing is. Here are two examples:
 - a. While you are writing a letter, the computer checks your spelling and grammar.
 - b. While you are playing a card game the computer calculates what move it should make.
4. Give the definition of 'computer'.
5. How can we define the computer?
6. For each of the following sentences, say whether the operation being performed is input, processing, output, storing, retrieving, sending, or receiving.
 - a. You write an email.
 - b. You attach a picture you have on your computer.
 - c. You make the computer search for the receiver's email.
 - d. You send the email.
 - e. The computer shows you a message with the words 'message sent'.
 - f. After a while, a reply arrives.
 - g. It has an attachment, and you save the attachment on secondary storage.
7. Explain the terms:
 - a. Primary memory
 - b. Secondary storage.
8. Briefly explain what the input/output system does.
9. What are 'buses'?

10.If $A=0$, $B=1$ and $C=1$, find the value of the following Boolean expressions:

- a. $AB + C'$
- b. $B'A + A'C$
- c. $B(A + A'C)$

11.For the expression $B'A + A'C$

- a. Draw its logic circuit.
- b. Find its truth table.

12.Convert 67_{10} to binary.

13.Convert 11100101_2 to denary.

14.Perform the following binary operations:

- a. $10011010 + 101011$
- b. $11001100 - 1011010$