Year 9 Revision exercise for Half-Yearly (to be continued)

1. Define the term computer.
2. For the following input devices give one advantage and one disadvantage:
    a. Keyboard
    b. Mouse
    c. Flatbed scanner
    d. Handheld scanner
3. For the following output devices give one advantage and one disadvantage:
    a. Screen
    b. Speaker
    c. Printer
    d. Touch screen (also an input device)
4. Which of the following computer parts performs the processing?
    a. RAM
    b. CPU
    c. ROM
    d. Port
5. Define the following terms:
    a. Hardware
    b. Software
    c. Hard copy
    d. Soft copy
    e. Program
6. For the following secondary storage devices write down how much memory they normally hold:
    a. Hard disk
    b. Pen drive
    c. Tape
    d. SSD
    e. CD
    f. DVD
7. What is the difference between Serial access and Direct (Radom) access?
8. What are Input Validation and (input) Verification?
9. Give an example of a value that is:

a. An integer
b. A real number
c. A string
d. A Boolean
e. A character

10. What is the difference between Data and Information?

11. Software is normally divided into System Software and Application Software.
    a. Explain the difference between them.
    b. Give two examples of each.

12. All computers have an Operating System.
    a. What is an operating system?
    b. What is the name of your personal computer's operating system?
    c. What is the name of your smart phone's operating system?
    d. Name another operating system.

13. Perform the following conversions:
    a. 75_{10} to binary
    b. 10001110_2 to decimal
    c. 1011110001101_2 to hex
    d. $7D_{16}$ to binary

14. Perform the addition $1001101_2 + 10111011_2$.

15. Perform the subtraction $100110111_2 - 10111010_2$.

16. If A=1, B=0 and C=1 evaluate the expression A.(B + C').

17. For the Boolean expression A + A'B'
    a. Draw the logic circuit.
    b. Draw its truth table.

18. A program asks you how many items of three objects you are buying. A tin of beans costs €0.65, tuna costs €0.60 and peas €0.63. The program works the total. If this total is equal to or exceeds €10 a reduction of 5% is given. Write such a program.

19. Take a look at the following program and then answer the questions below:

```
1  public class Bill
2  {
3      public static void main (String[] args)
4      {
```

```
5         System.out.print ("Enter number of oil cans: ");
6         int cans = Keyboard.readInt();
7         System.out.print ("Enter kilograms of tomatoes: ");
8         double tom = Keyboard.readDouble();
9         System.out.print ("Enter kilograms of olives: ");
10        double oli = Keyboard.readDouble();
11
12        double bill = cans*1.2 + tom*1.45 + oli*0.73;
13        if (bill>10)
14           bill = bill - 1;
15
16        System.out.println ("Your bill amounts to " + bill);
17     }
18  }
```

a. What is the name of the **class**?
b. Write the line numbers of the **input** instructions.
c. Write the line numbers of the **output** instructions.
d. Write the line numbers of the **processing** instructions.
e. Write down all the **variables** used in the program together with their **types**.
f. Write down the only **condition** in the program.
g. Write the above program as a **flowchart**.
h. Write the above program in **pseudocode**.

20. Take a look at the following list of programs: word processor, antivirus program, email program, web browser, operating system, spreadsheet, game, database management system, presentation software.
    a. Say which ones fall under applications software and which ones fall under system software.
    b. For each write down two features.

21. Associate each of the following terms on the left with its respective meaning on the right.

CPU		It is the process that copies an instruction from RAM to the CPU and performs it.
RAM		It is a fast memory.
ROM		It is found inside the CPU and is responsible to tell the ALU what to do.
Fetch execute cycle		It executes instructions.

Buses		It holds important programs that are useful when the computer is switched on.
Cache		It is the unit inside the CPU which performs all calculations.
ALU		It holds programs while they are being processed.
Control unit		It starts the process of copying the operating system from secondary storage to RAM.
Bootstrap loader		They take data and addresses from one place to another inside the computer.

22. Below is an algorithm expressed in pseudocode. Write it in Java.

```
{
    Ask user to enter the base
    The user enters b
    Ask user to enter the height
    The user enters h
    The program calculates a = 0.5*(b*h)
    The program displays area a
}
```