

Department of Education
Stanmore Secondary School
First Controlled Test 2015
Grade 11 – Information Technology

Time: 1 Hour

Marks :50

Question One: MULTIPLE CHOICE (10 MARKS)

For each question, 1.1. to 1.10. there are four options for the question above it.

Choose the option(A-D) that best matches the question and write down only the letter of your choice.

1.1. The speed of the CPU is measured in:

- A. Megahertz
- B. Bits per second(Bps)
- C. Gigabytes(GB)
- D. Megabytes(MB)

1.2. It enables more than one program or parts of the same program to be processed at the same time on different processors.

- A. Multiprogramming
- B. Multitasking
- C. Multiprocessing
- D. Simultaneous processing

1.3 A device driver ...

- A. is unnecessary when plug and play is implemented.
- B. is firmware which is embedded in new devices manufactured after 2005.
- C. is automatically included in any new device which implements hotswapping.
- D. is software that provides communication between a peripheral and the operating system.

1.4 An internal bus ...

- A. is the pathway used to transfer data between CPU and RAM
- B. connects printers to stand-alone PCs.
- C. stores the results of calculations performed in the CPU.
- D. comes in several types, such as data, instruction or address.

1.5 Firewire is ...

- A. becoming the preferred method to connect almost any peripheral to a computer.
- B. the best data connection to use for capturing a digital video.
- C. a parallel communication standard which allows devices to transfer data at high speeds.
- D. software that prevents unauthorised access to a network.

1.6 The ALU is ...

- A. the Amalgamated Linux Unix environment.
- B. a register which stores arithmetic data.
- C. a unit which performs mathematical calculations
- D. how characters are represented in Unicode.

1.7 The hardware component used in the start-up of a computer.

- A. CPU
- B. BIOS
- C. USB
- D. UPS

1.8 ... is non-volatile memory that can be used as secondary storage.

- A. SRAM
- B. DRAM
- C. Flash memory
- D. Cache memory

1.9 Which operating system has been designed specifically to work on a cellphone?

- A. Android
- B. Solaris
- C. Windows Vista
- D. Linux

1.10 An IRQ stands for

- A. Interrupt Request
- B. Internal Request Query
- C. Interruption Query
- D. Interrupt Relay Line

[10]

Question Two

You have been appointed as the new IT manager at a shopping mall that is due for renovations. As part of the renovations, the following will be done:

Two of the old computers have Pentium motherboards . One of the technicians suggest that all the PC's be upgraded to use the Windows 7 operating system.

2.1 List 3 functions of the motherboard. (3)

2.2 One technician stated that the computer's CPU and ROM needs to be upgraded.

2.2.1 Explain the purpose of a ZIF socket (1)

2.2.2 List any 2 functions of the CPU. (2)

2.2.3 Explain the term firmware (1)

2.2.4 Explain the abbreviation EEPROM. (1)

- 2.3 List 3 characteristics of RAM. (3)
- 2.4 Modern computers generally support the concept of 'plug and play'.
Briefly explain the meaning of this concept. (1)
- 2.5 The older computers that could have been used contain cache memory inside the CPU.
Briefly define the term cache memory and explain how it works. (2)
- 2.6 Older computers use a LPT port and a COM port for the printer and mouse respectively.
- 2.6.1 What is the new port that can be used to connect almost all new devices? (1)
- 2.6.2 List 2 advantages of using such a port. (2)
- 2.7 Upgrading will not be that expensive because of the modular design of a PC
- 2.7.1 Explain what is meant by the term modular design of a PC. (1)
- 2.7.2 Other than the cost, state TWO advantages of the modular design of PCs. (2)
- 2.8 It was suggested that the CD Writers needs to be changed to DVD Writers.
- 2.8.1 Why is it necessary to do this? (1)
- 2.9 Backing up of the data is also very necessary. Portable hard drives were chosen for this purpose.
- 2.9.1 Tabulate 2 differences between the 3.5" and the 2.5" portable hard drive. (4)

Question Three

Java Programming

```
L1    String a = n1.getText();
L2    String b = n2.getText();

L3    int a1 = Integer.parseInt(a);
L4    int a2 = Integer.parseInt(b);
L5    for (int j = 1; j < a2 ; j++)
L6    {
L7        if (a1 % j == 0 && a2 % j == 0)
L8        {
L9            String jj = Integer.toString(j);
L10           txtOut.setText(jj);
L11        }
L12    }
```

Study the above Java program and answer the questions that follow.

3.1 Explain what the code in L7 does. (1)

3.2 Trace the above code with the following 2 numbers as input. (5)
Use the headings from the table below as a guide.

a1	a2	For Loop	if (a1%j == 0 && a2%j==0)	jj	txfOut.setText(jj)
9	12				

Question Four

A program has been developed as below. The GUI is used to save details.

4.1 Give a possible motivation for the choice of each of the following components:

4.1.1 Combo box for the selection of age (2)

4.1.2 Radio buttons for the selection of gender (2)

(NB: the same motivation will NOT be accepted for both answers)

4.2 Why will the value entered in the surname field rarely lead to a run time error? (2)

4.3 The components used for the date selection will not prevent an invalid date from being selected.

Motivate this statement and use an example to illustrate your answer. (3)