S4MCE COMPUTER SCIENCE REVISION EXERCISES FOR FIRST TERM

1) Discuss the difference between the following:
    a) Artificial Intelligence (AI) and Robotics branches of computer science
    b) Control Unit(CU) and Arithmetic and Logic Unit
2) Answer by using T (True) or F (False):

    a. Information is meaningless row facts

    b. RAM is expensive and almost a limited amount of storage

    c. Operating system software is software which manages the operation of the computer itself.

    d. A computer is very versatile device. This means that it can perform one action at a time.

    e. Touch screen is input device

3) Discuss the following characteristics of a computer**:**
    i. Diligence
    ii. Accuracy
    iii. Versatility
4) Using internet, magazines or other book references, discuss the classification of computers according to:
    - Physical size and processing power
    - Functions they perform
    - Types of data they process
5) Discuss the advantages and disadvantages of supercomputers over microcomputers
6) Explain how computer can be used in Economic field
7)

Match the following computer application areas numbered 1 - 8 with the role played in column numbered A - H.

1. Supermarket	A – Forensic investigations
2. Hospital	B – Entertainment
3. Bank	C – Stock control
4. Hotel	D – Booking rooms
5. Home	E – Analysing academic data
6. School	F – Motor vehicle assembly
7. Industry	G – Remote monitoring of patients
8. Police station	H – Processing cash transactions

8)

Apart from using computers and other ICT devices such as mobile phones as productivity tools at home and workplace, they can be used to address various social, environental and cultural issues. Brainstorm on how computers can be used in Rwanda to promote:

- *Peace and reconciliation.*
- *Ndi Umunyarwanda philosophy.*
- *Environmental management.*
- *Sexuality and moral values.*

9) Each generation of computer is characterized by a major technological development that fundamentally changed the way computers operate, resulting in increasingly smaller, cheaper, more powerful and more efficient and reliable devices.

Outline a major technological development characterizing every computer generation

10)

Match the following generations of computers with the technology used to develop them.

1. First generation	A – Very large scale integrated circuit
2. Second generation	B – Thermionic valves
3. Third generation	C – Transistors
4. Fourth generation	D – Integrated circuits

11) Find the answers of questions below:

Define the term artificial intelligence.

Explain how integrated circuits contributed to the development of microcomputers.

Highlight some of the achievements of the fifth generation computers.

12) Discuss reason why USB devices are more popular today.
13) Explain what happens when one of the pins on VGA connector happens to be damaged?
14) Draw similarities and difference between USB and HDMI ports and connectors
15) Enumerate any five internal components of Central Unit (Computer case)
16) Why do call RAM as Volatile memory?
17) Discuss the types of port according to their functions and give one example for each type

Adan intends to start computer bureau services such as printing and cyber cafe in Kigali. Assuming Adan has come to seek advice on specifications to consider before purchasing computers:

- Use demonstration or illustration to help Adan differentiate between desktop and tower type system unit.
- Take Adan through the ports at the back of the system unit explaining to him the purpose of each.
- Demonstrate and help Adan connect basic peripheral devices such as monitor, keyboard, mouse and printer to the right ports.

18) Distinguish between the following:
(a) AC and DC power supply.
(b) Bluetooth and infrared connectivity.
(c) Firewire and USB ports.
(d) 5-pin DIN and PS/2 ports.

19) What is the role of jumper on hard drive?

20) What is the role of disk partitioning?

21) Highlight three benefits of cleaning a computer and peripheral devices regularly.

22) Discuss two interfaces of operating system

23) Discuss different steps of Windows 7 installation

24) Convert the following decimal numbers to binary number system
   i. Use Division by base method: 89_{10}

25) Perform the following conversion:
   a. $(110101001)_2 = (\ ?\ )_8 = (\ ?\ )_{10}$
   b. $(13.68)_{10} = (\ ?\ )_2$