* All data and instructions in a computer are stored as a 0 or a 1
* The 0 or 1 represents the state of a switch (transistors) inside a computer
* There are millions of transistors in a computer
* 0 represents the "on" state
* 1 represents the "off" state
* a 0 or a 1 represents 1 bit of information
* There are 8 bits in one byte
* There are 4 bits in one nibble
* Kilomeans 1000
* For example, kilometre is 1000 metres
* Kilogram is 1000 grams
* So a Kilobyte is 1000 bytes
* Well, close. It is actually 1024 bytes
* Simple MS Word documents without pictures range from 10 to 40 Kilobytes or kB
* A low quality Jpeg image may range from 50 to 500 kBs

Megameans 1000 000 (1 million)

For example, megametre is 1000000 metres

* So a Megabyte is 1000 000 bytes
* Or a Megabyte is 1000 Kilobytes
* High quality pictures from your digital camera will be 1 to 4 megabytes or MBs
* iTunes on installed on your computer is about 100 MBs
* A 3 minute song at CD quality is about 3 MBs (as mp3 file)
* Gigameans 1 000 000 000 (1 billion)
* For example, gigametre is 1 000 000 000 metres
* So a Gigabyte is 1 000 000 000 bytes
* Or a Gigabyte is 1000 Megabytes (or 1 000 000 KBs)
* Windows OS installed is about 20 GBs
* MS Office installed is about 10 GBs
* 1 DVD quality movie of 2 hours will be about 4.7 GBs
* Of course, if you want to store lots of pictures, music and videos on your computer, you will need GBs

Nowadays most memory comes in GBs

Hard disks range in 250 GBs to 1000 GBs (this is a terabyte)

• MP3 players nowadays come with hard disks ranging from 1 GBs to 120 GBs (new iPhone for example is 32 GB)

* Flash memory sticks range from 1 to 64 GBs
* SD cards range from 1 to 16 GBs
* RAM (main memory) ranges from 1 to 8 GBs
* New desktop computers are coming equipped with a TB

(terabyte) of hard disk (1000 GBs)

# Understanding Memory Sizes and Terminology

* Question1: How many 50 KB Word documents could you store on a

120 GB hard drive?

120 GB = 120 000 000 000Bytes 50KB = 50 000Bytes

120 000 000 000 / 50 000 = 2 400 000 Therefore you can store 2.4million

50KB Word documents on a 120GB hard drive.

* Question 2: How many 4 minute songs could you store on a 32 GB

iPod (assuming 1 MB per minute MP3 quality)?

* 1 4 minute song takes 4MB

32GB = 32 000MB 32 000 / 4 = 8000

Therefore you can store 8000 4MB songs on a 32GB iPod.

* Question 3: How many 5 KB emails could you store on your email

account before it is full assuming an inbox size of 5 MBs)

5MB = 5000KB

5000 / 5 = 1000 Therefore you can store 1000 5KB emails in your inbox assuming an inbox of 5MB.

* Question: How many 4 GB movies could you store on a 500 GB hard

drive?

500 / 4 = 125

Therefore you can store 125 4GB movies on a 500GB hard drive.

Question 4: What is a Motherboard? Write a definition for this.

A motherboard is the main circuit board of a computer; it connects all of the different computer components together.

Question 5: What is RAM and ROM What is the difference? How does these work?

RAM is memory controlled by the CPU and is used to feed the CPU with data at a much higher rate than a hard drive or SSD. ROM is memory on a computer that cannot be modified by the user.

Question 6: What is video card? What is the its purpose?

A video card is a separate processing unit designed to process graphics. It’s purposes include: rendering videos, processing video games, playing and outputting video to a display.

Question 7: What is Optical Disc drive? Why it is used?

An Optical disc drive is used to read and write information onto DVD and Blu-Ray discs. It is used because it is the only tool able to read and write to Optical drives.

Rubrics Name on every page \_\_\_\_\_\_\_\_/1

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Submission as Word document \_\_\_\_\_\_\_\_\_/1

Definitions and Questions \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_/14

Total Marks \_\_\_\_\_/17