IMPORTANT QUESTIONS FOR SECTION C   **COMPUTER**

Q.1 Classify the Computers according totheir size

Computers are also divided into four groups according totheir size.

(a) SUPER COMPUTERS

Super Computers are the most powerful, fastest and largest computers. They are extremely expensive. These computers are widely used in scientific applications such as aerodynamics, design simulations, processing of geological data, weather forecasting and nuclear research.

(b) MAINFRAME

Mainframe Computers are powerful multi-user and multiprocessors computers. They can process huge amount of calculations at very high speed. Mainframes are also very expensive and require a lot of technical expertise to be installed and operated. They are used in banks and many large business organizations where several users work simultaneously.

(c) MINICOMPUTER

These are smaller than mainframe computers, but they are more powerful than Microcomputers. Minicomputersusually use multi-user operating system. Multiple users can use the Minicomputers through terminals. Minicomputers may be used as network servers and Internet servers. DEC VAX and IBM AS/400 are good examples of minicomputers.

(d) MICROCOMPUTERS

Microcomputers are also called Personal Computers (PCs). The use of microprocessor has made computers cheaper yet faster and more reliable. These are the smallest computers designed to be used by individuals. PCs can be used for variety of tasks like documentation,calculations, illustration and entertainment. The power of network and internet has also made it more useful.

Now computers are also used for communication andsocialization

Q.2 Discuss the Functions ofOperating System

FUNCTION OF OPERATING SYSTEM

Operating system manages every activity of a computer. It is the master control program that provides an interfacefor a user to communicate with computer. System software and application software run on operating
system. Operating System performs the **FOLLOWING** **FUNCTIONS**

(i)Booting

Booting is a process of starting the computer operating system. It checks the computer resources and makes it ready to perform different tasks.

(ii) Resource Management

Operating system manages all the **hardware and software resources. This includes allocation and de-allocation of processor, memory, access to shared cache memory and access to network resources**.

(iii) User Interface or Command Interpreter

We interact with operating system through user interface.**Command interpreter is one of the parts of operating system which reads the commands from user, interprets them and translates them into machine language** instructions that the computer hardware can understand.

(iv) Memory Management

Memory management module performs the task ofallocation and de-allocation of memory space to programs and data in need of these resources.

(v) Input / Output (I/O) Management

An Operating System provides the device driver to facilitate I/O functions involving I/O devices. These devicedrivers are software that control I/O devices through theircontrollers

(vi) File Management

It manages all the file -related activities such as organization storage, retrieval, naming, sharing, and protection of files.

(vii) Process Management

A process is a job or activity to be performed by the system. Process management manages creation, deletion,
suspension and resumption of processes. The term process refers here to program code that has been loadedinto a computer's memory for execution by the central processing unit (CPU). In a multiprogramming system, there will be a number of computing processes. The operating system must ensure that each process gets a fair share of the CPU's time. The OS decides the order inwhich processes have access to the processor, and how
much processing time each process should get. Thisfunction of OS is called process scheduling

Q3. Explain briefly Twisted Pair Cable, Coaxial Cable and FiberOptic Cable?

a) Twisted Pair Cable

This type of cable is made by two separate wires twisted together. A twisted pair cable is made up of insulated wires. The insulation and twisting of wires prevent external interference (Noise). Each pair of wires has unique color code. This type of cable is widely used in different kinds of data and voice infrastructures. There are two types of twisted pair cables:

Unshielded Twisted Pair (UTP) and Shielded TwistedPair (STP)

(i) Unshielded Twisted Pair (UTP)

This type of cable can block interference but it is vulnerable to external interference. It is mostly used for telephonic applications. It is less expensive and easy to install.

(ii) Shielded Twisted Pair (STP)

This type of cable consists of a special coating to block external interference. It is used in fast-data-rate Ethernetand also in voice and data channels of telephone lines.

(b) Coaxial Cable

Coaxial cable is also known as coax. It has an outer plasticcovering containing two parallel conductors each having a separate insulated protection cover. Cable TVs and analog television networks widely use coaxial cables.

(c) Fiber-Optic Cable

In optical fiber or fiber-optic cable data is transferred inthe form of light. It uses the concept of refraction of lightthrough a core made up of glass or plastic. The core is surrounded by a less dense glass or plastic covering called the cladding. It is used for transmission of large volumes of data at very high speed

Q.4 Define any two of them? (Switch, Router, Modem)

(i) SWITCH

A switch is a special device that connects computers and other deviceslikeprinters, scanners and cameras on a network. Data cables from all computers and otherdevices of network are plugged into the switch to enable communication b/w them.

(ii) ROUTER

A Router is a device that connects two or more networks.Routers are a combination of hardware and software. Themain function of a router is to determine the optimal datapath and transfer the information through that path,Router is also known as network traffic controller.

(iii) MODEM

Modem is short for Modulator and Demodulator. Modulation is the process of converting digital signalsinto analog signals. Demodulation is quite opposite; it converts analog signals into digital signals

Q.5 Classify the Computers according to Technology orType of Data they handle?

According to Technology or type of data they handle, computers are classified into three types.

(a) ANALOG COMPUTERS

Analog Computers are used to process analog data. Analog data are in the form of continuously varying physical quantities like pressure, temperature, voltage, speed and weight. Examples of Analog computer are speedometer of a car, voltmeter etc.

(b) DIGITAL COMPUTERS
Digital Computers are most commonly used type of computers. They are used to process information with quantities using the binary number system (0's and 1's). Digital Computers are used in home, educational institutes, offices, business, scientific fields, etc.

(c) HYBRID COMPUTERS

Hybrid Computers are the combination of Analog andDigital Computer system. These computers combine analog and digital features of computers in a single machine. A Hybrid Computer uses analog to digital and
digital to analog conversion. It may input or outputeither digital or analog data.

Q.6 Discuss Second and Third Generation of Computers?

a) FIRST GENERATION OF COMPUTERS (1940 TO 1956)

Based on vacuum tubes, first generation computers were very large in size. This generation computers used Machine Language (i.e. 0's and 1's). Magnetic drums were used as primary internal storage medium and punched cards for input. In this generation mainly batch processing operating system was used. Computers of this generation were primarily used for scientific and research purposes. Electronic Numerical Integrator and Calculator (ENIAC), Universal Automatic Computer (UNIVAC) were examples of first generation computers.

(b) SECOND GENERATION OF COMPUTERS (1956 TO 1963)

With the usage of **TRANSISTORS** computers became smaller, faster, cheaper and more efficient. Assembly language and a high-level language FORTRAN were introduced. Magnetic core was used as a primary internal storage medium. Punched Cards were used for input. Batch processing and Multiprogramming Operating systems were used. These computers were mainly used for commercial productions, scientific and engineering analysis and design.
Examples are IBM 7094 and IBM 1401