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Q:- What is the relation between hardware and software, and types of software with logical architecture.

Ans:- (1) Software:-

Refers to a collection of programs

(2) Hardware:-

Refers to the physical device of a computer system.

* Relationship Between Software and Hardware.

- Both hardware and software are necessary for a computer to do useful job. They are complementary to each other.
- Some hardware can be loaded with different software to make a computer system perform different types of jobs.
- Except for upgrades, hardware is normally a one-time expense, whereas software is a continuing expense.
- Upgrade refers to renewing or changing components like increasing the main memory, or hard disk capacities, or adding speakers, modems, etc.

* Types of Software :-

Most software can be divided into two major categories.

□ System Software :-

System software are designed to control the operation and extend the processing capability of a computer system.

□ Application software :-

Application software are designed to solve a specific problem or to do a specific task.

* System Software :-

Make the operation of a computer system more effective and efficient.

□ Help hardware work together and provide support for the development and execution of software.

(3)

□ Help hardware components work together and provide support for the development and execution of application software.

□ Programs included in a system software package are called system programs and programmers who prepare them are called system programmers.

□ Examples of system software are operating system, programming language translators, utility programs, and communication software.

* Application Software:-

□ solve a specific problem or do specific task.

□ Programs included in an application

software package are called application programs and the programmers who prepare them are called application programmers.

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* Logical System Architecture

Hardware (Physical devices/ components of the computer system)
System Software:-

(Softwares that constitute the operating system and programming environment of the computer system).
Application Software.

(software that do a specific task or solve a specific problem).

USERS

(Normally interact with the system via the user interface provided by the application software).

Relationship among hardware, system software, application software, and users of a computer system.

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Q3: write about on Multimedia and its type with 'Common media for storage, access and transmission in details-

Ans: Multimedia:-
Media is something that can be used for presentation of information.
A Two basic ways to present some information are:-

1. Unimedia presentation:-

Single media is used to present information.

2. Multimedia presentation:-

More than one media is used to present information.

3. Multimedia presentation is any information greatly enhances the comprehension capability of the user as it involves use of more of our senses.

* Common media:-

Common media for storage, access and transmission of information are:-

- Text (Alphabetic Characters)
- Graphics (line drawings and maps)
- Animation (moving images)

(6)

- Audio (sound)

- video (videographed-real-life events)

□ Multimedia in information technology refers to use of more than one of these media for information presentation to users -

(7)

Ans:-

* Optical Fiber Communication System :

Optical Fiber communication system is the method of communication in which signal is transmitted in the form of light and optical fibers is used as a medium of transmitting these light signal from one place to another .

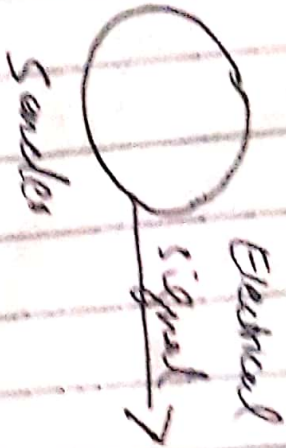
* Modulation Technique :-

To overcome the drawbacks of baseband transmission and to transmit baseband signals by radio, modulation techniques must be used .

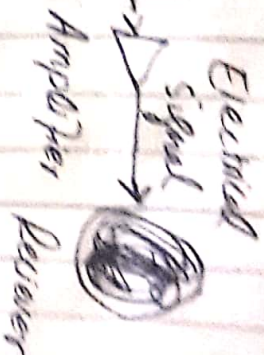
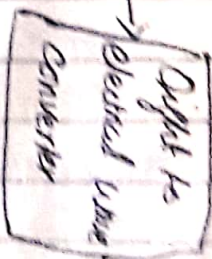
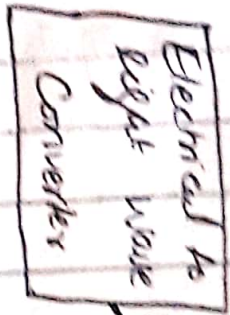
Baseband signal (information signal) is also - frequency signal and cannot travel longer distance .

Definition :-

Modulation is the process of superimposing low - frequency signal on high - frequency carrier signal .



(2)



* Multiplexing:-

- A method of dividing physical channel into many number of independent signals may be simultaneously transmitted.
- Electronic device that performs multiplexing is known as a multiplexer.
- Multiplexing enables a signal transmission medium to concurrently transmit data between several transmitter and receivers.

Two basic methods of multiplexing.

- ① Frequency - division multiplexing (FDM)
- ② Time - Division Multiplexing (TDM)

* Switching Techniques

- Data is often transmitted from source to destination through a network of intermediate nodes.
- Switching techniques deal with the method of establishing communication links between the sender and receiver in a communication network.

(10)

Three commonly used switching techniques.

(1) circuit ~~to~~ switching.

(2) message switching.

(3) packet switching.

(11)

Q4: What is OSI reference model explain each layer of OSI model in detail.

Ans: The OSI Model:—
The open system interconnection (OSI) model is framework for defining standards for linking heterogeneous computers in a packet switched network.

Standardized OSI protocol makes it possible for any two heterogeneous computer systems, located anywhere in the world, to easily communicate with each other.

Separate set of protocols is defined for each layer in its seven-layer architecture. Each layer has an independent function.

* layers, Interfaces, and protocols in the OSI model.

