Name:- M. Musa

ID:- 14531

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Question N.o (1):-

Answer:-

Multimedia is a form of communication that combines different content forms such as texts, audio, images, animations, or video into a single presentation in contrast to traditional mass media such as printed material or audio recordings.

Question N.O (2):-

Answer:-

Essentialy computer softwares controls computer hardwares. These two components are complementary and can not act independantly of one another. In order to computer effectively manipulate data and produce useful outputs, its hardware and software must work togather. Without software computer hardware is useless. Conversly computer software can't be used without supporting hardware. Similary computer software has first to be loaded into the hardware then executated. There are several categories of software, with two main categories being operating - system software, which make the hardware usable and application software which does something useful forexample Micro soft Windows and Google's

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Android phone. Example of application softwares are Microsoft Office etc.

logical architecture is a structural design that gives as much details as possible without constraining the architecture to particular technology and enviorment. And some types of softwares are. Algorithms, Enterpise architecture, hardware architecture etc.

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Question N.O 3:-

Modulations techniques:-

Modulation is the process of converting data into electrical signals optimized for transmission. Modulation techniques are roughly divided into 4 types Analog Modulation, Digital modulation, Pulse Modulation and Spred spectrum method.

Analog modulation is typically used for AM, FM radio and short wave broad casting.

Digital modulation involves transmission of binary signals (0 and 1).

This method is divided into single carrier modulation, by which the carrier occupies the entire bandwidth (i.e amplitude, frequency and phase), and a multi carrier scheme that modulates and transmits different data on multiple carriers. In addition, there is a pulse modulation technique used to change the pulse width and spread

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spectrum methods that spreads the signal energy over a wide band.

Multiplexing And De Multiplexing :-

Multiplexing :-

In communication system, increase the efficiency of the communication system by allowing the transmission of data such as audio and video data transmission. It keep up a vast amount of memory in the computers and decrease the number of copper lines necessary to connect the memory to other parts of computer as well. In telephone network, integrate the multiple audio signals on a single line of transmission.

De Multiplexing :-

In communication System, recieves the output signals from the multiplexer and converts them back to the original form at the

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reciever end. The output of the arthmetic logic unit is fed as an input to the Demux and the o/p to the Demux is connected to a multiple registers. In serial to parallel converter, the serial to parallel conve-rter is used to perform parallel data. In this method, serial data are given as input to the Demux and a counter is attached to the Demux to sense the data signals of the Demux's O/P. when all data signals are stored, the output of Demux can be read out in parallel.

Switching Technique

Switching techinques are those in which data transferred from source to destination is routed b/w various intermediate nodes. Switching is the technique by which nodes control or switch data to transmit it between specific points on a network.

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there are 3 common switching techniques

Circuit Switching

Packet Switching

Message Switching.

Optical fiber Communication System

fiber optic communication is a method of transmitting information from one place to another by sending pulses of infrared light through an optical fiber. The light is a form of carrier wave that is modulated to carry information. fiber is preferred over electrical cabling when high bandwidth, long distance, or immunity to electromagnetic interference is required. This type of communication can transmit voice, video and telemetry through local area networks or across long distances.

Optical fiber is used by many tele-communication companies to transmit telephone signals, internet communication

and cabel television signals. Researchers have reached internet speed of over 100 petabit x kilometer per second using fiber optic communic-ation.

Question N.O (4):-

Answer:-

The OSI Model is a conceptual frame work used to describe the functions of a networking system. The OSI model characterizes computing functions into a universal set of rules and requirements in order to support interopevability b/w different products and software. In the OSI reference model the communications between a computing systems are split into seven different abstraction layers:-

i) Physical layer:-

The lowest layer of the OSI model is concerned with electrically or optically transmitting

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raw unstructured data bits across the networks from the physical layer of the recieving device. It can include specifications such as voltages, pin layout, cabling, and radio frequencies. At the physical layer one might find physical resources such as cabels, network hubs etc.

ii) Data link layer:-

The data link layer is the proto-col layer in a program that handles the moving of data into and out of a physical link in a network. The data is layer 2 in the OSI ~~interconn~~ architecture model for a set of telecommunication protocols.

iii) Network layer:-

The network layer is the 3rd layer of the OSI model. It handles the service requests from the transport layer and further forwards the service request to data link

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layer. The network layer translate the logical addresses into physical addresses.

iv) Transport layer:-

The transport layer manages the delivery and error checking of data packets. It regulates the size, sequencing, and ultimately the transfer of data betwem system and hosts. One of the most common example of transport layer TCP or Transmission Control Protocol.

v) Session layer:-

The session layer controls the conversation b/w different computers A session or connections between machines is set up, managed, and ~~trained~~ termined at layer 5. Session layer services also include authentication and reconnections.

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vi) Presentation layer:-

The presentation layer formats or translates data for the application layer based on the syntax or semantics that the application accepts. Because of this it at times it is also called syntax layer. This layer can also handle the encryption and decryption required by the application layer.

vii) Application layer:-

An application layer is an abstraction layer that specifies the shared communications protocols and interface methods used by hosts in a communication network. The application layer abstraction is used in both of the standard models of computer networking: The internet protocols suite (TCP/IP) and the OSI model.