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Section 80 B

Exam 80 Final Term

Paper 80 Computer Skills

Date 80 25/9/2020

Semester 80 1st

Q 1 (a) Differentiate between open source software and applications software?

(b) Write different features of system software?

Ans 80 System Software 80

2 open source software is software with source code that anyone can inspect, modify, and enhance, "source code" is the part of software

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That most computer users don't even see; it's the code computer programmers can manipulate to change how a piece of software - a "program" or application - works. Programmers who have access to a computer program's source code can improve that program by adding features to it or fixing parts that don't always work correctly.

Application software is a program or group of programs designed for end users. Examples of an application include a word processor, a spreadsheet, an accounting application, a web browser, an application email client, a media player, a file viewer, simulator, a console game or a photo editor. The collective noun application software refers to all applications collectively.

Applications may be bundled with the computer and its system software or published separately, and may be coded as proprietary, open-source or university projects.



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→ different feature of System Software.  
System Software is closer to the system.

Generally written in a low-level language. The system software is difficult to design and understand. Fast in speed. Less interactive. Smaller in size. Hard to manipulate.

Q3 (a) Explain Metropolitan Area Network (MAN) with suitable example?

(b) Define topology? Which topology would you choose to setup a local area network and why?

Ans A metropolitan area network (MAN) is a network that interconnects users with computer resources in a geographic area or region larger than covered by even a large local area network (LAN) but smaller than the area covered by a wide area network (WAN).

A metropolitan area network (MAN) is a network that interconnects users with computer resources in a geographic

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area or region larger than that covered by even a large local area network (LAN) but smaller than the area covered by a wide area network (WAN). The term is applied to the interconnection of networks in a city into a single larger network. It is also used to mean the interconnection of several local area networks by bridging them with backbone lines. The latter usage is also sometimes referred to as a campus network.

### (b) Define topology.

A topological space is a set endowed with a structure, called a topology, which allows defining continuous deformation of subspaces, and, more generally, all kinds of continuity. Euclidean spaces, and more generally, metric spaces are examples of a topology. Homeomorphisms and homotopies. A topological properties are: the dimension, which allows distinguishing between a line and a surface; compactness, which



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allows distinguishing a circle from two non-intersecting circles.

The term topology was introduced by Johan Benedict Listing in the 19th century, although it was not until the first decades of the 20th century that the idea of a topological space was developed.

### Local area networks.

A star network is a local area network in which all computers are directly connected to a common central computer. Every workstation is indirectly connected to every other through the central computer. In some star networks, the central computer can also operate as a workstation. A star network topology is ~~best~~ best suited for smaller networks and works efficiently when there is a limited number of nodes. One has to ensure that the hub or the central node is always working and extra security features should be added to the hub because it's the network. To expand a star topology network,

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you'll need to add another hub  
and go to a "star of stars" topology.  
in a Star Network Topology it is  
possible to have all the important data  
backups on the hub in a private folder  
and this way if the computer fails you  
can still use your data using the  
next computer in the network and  
accessing the backup files on the hub.



Q2: (a) Discuss different function of operating system?

Ans: An operating system includes all the programs of a computer system that control and monitor the operations of the system typically consist of a kernel that manages the hardware of the computer, as well as basic system programs that are used to boot the operating system and configure it we are going to discuss main functions of operating system.

Function of operating system. operating system perform the following functions:-

1) Booting:-

Booting is a process of starting the computer operating system starts the computer to work. it checks the computer and makes

it ready to work.

## (2) Memory Management :-

it is also an important function of operating system. The memory cannot be managed without operating system. Different programs and data execute in memory at one time. If there is no operating system the programs may mix with each other. The system will not work properly.

## (3) Loading and Execution :-

A program is loaded in the memory before it can be executed. Operating system provides the facility to load programs in memory easily and execute it.

## (4) Data Security :-

Data is an important part of computer system. The operating —



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system protects the data stored on the computer from illegal use, modification or deletion.

### (5) Disk Management :-

operating system manages the disk space. it manages the store files and folders in a proper way.

### (6) Process Management :-

CPU can perform one task at one time. if there are many tasks, operating system decides which task should get the CPU.

### (7) Device Controlling :-

operating system also controls all devices attached to computer. the hardware devices are controlled with the help of small software called

(8) device drivers.  
Printing Controlling %

Operating system also Controls Printing function. if a user issues two Print Commands at a time. it does not mix data of these files and Print them Separately.

(9) Providing interface %

It is used in order that user interface acts with a computer mutually. user interface Control how you input data and instruction and how information is displayed on screen. The Operating System offers two types of the interface to the user,



## Graphical - Line interface

it interacts with of visual environment of communicate with the Computer. it uses windows, icons, menus and other graphical objects to issues Commands.

Command-Line interface: it provides an interface to communicate with the Computer by typing Commands.

★ Q NO 02 - (b)

Explain the use of file transfer protocol and tell net Services?

(i) File transfer Protocol

★ FTP (File transfer Protocol) is the simplest and most secure way to exchange files over the internet.

★ Transferring files from a client Computer to a Server

Computer is called "uploading" and transferring from a server to a client is "downloading".

\* To access an FTP server users must be able to connect to the internet or an internet (via a modem or local area) network with an FTP client program.

\*: FTP doesn't really move, it copies files from one computer to another.

\*: FTP is the file transfer protocol in the internet's TCP/IP protocol suite. Application layer.

\*: An FTP client is software that is designed to move files back-and-forth between two computers over the internet.



## "Features"

\* FTP operates in a client Server environment, meaning that the remote machine is configured as a server and consequently waits for the other machine (client) to request a server from it.

\* in UNIX, the service is provided by what is called a daemon, a small task that runs in the background. The FTP is called ftpd.

\* The FTP protocol is used for transferring one file at a time, in either direction b/w the client machine and the server machine which provided the FTP service. i.e. the called machine.

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The FTP Protocol can also perform other actions, such as creating and deleting directories (only if they are empty) listing files, deleting and renaming files etc.

# 2

FTP allows files to have ownership and access restrictions.

# 3

FTP hides the detail of individual computer systems.



→ Q NO 04 :-

Q:- In your opinion, what are the different types of common media used for storage access and transmission of information? Explain each type in detail?

Ans:- In network communication, a transmission medium is a physical connection or an interface b/w the transmitter and the receiver. There are two major categories of transmission media namely guided and wireless (or unguided). Let us take a walk through the types of transmission media and connectors in detail in this lesson.

Let's first take a closer look at the different types of guided transmission media one at a time, -

## (1) Twisted Pair Cable

Twisted Pair Cables have been around for a long time. They were mainly invented for voice transmission, twisted pair is a widely used medium in networking because its lighter, cheaper, more flexible easy to install and provides greater speeds than coaxial cable, there are two types of twisted pair cable.

The Unshielded twisted pair (UTP) and the Shielded twisted pair (STP). Let's take a closer look at each of them.

The Unshielded twisted pair cable has 4 pairs of copper wires that are present inside a plastic sheath, these wires are twisted to protect them



from interface. The only protection available for a UTP cable is a plastic sheath that is thin in size.

The shielded twisted pair cable is widely used in high-speed networks. The major difference b/w UTP and shielded twisted pair is that STP makes use of a metallic shield prevents interference to a better extent than UTP.

These STP cables come with numbering, the better the interference prevention. As an example most computer networks must go with Cat 3 or CAT and nothing less than this.

## (2) Coaxial Cables:

The Coaxial

Cables have a central copper conductor, surrounded by an insulating layer, a conducting shield, and the outermost plastic sheath. Thus, there are three insulation layers for the inner copper cable. There are two basic modes of data transmission in coaxial cable: baseband mode that has dedicated bandwidth, and broadband mode that has distributed cable bandwidth.

Cable TV and analog television mainly use coaxial cable. Coaxial cables have better resistance to cross talk than twisted pair cable. The coaxial cables are used for long distance communication. The most widely used type



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types of coaxial cables are RG-59 and RG-6 (RG stands for radio guide) RG-59 has Laser Shielding and is suitable for short cable lengths and cable TV connection.

RG-6 better insulation than RG-59 and is used for satellite TV and digital signal transmission for better strength and longer distances.

There are many advantage to coaxial cable, including the following:

High bandwidth.

Easy and cheap installation

Better immunity from noise

Better Scaling.

However, there are also a number of disadvantage

to Coaxial cable which include the following.

They are more prone to lightning strikes. They cover less distance than fiber optic cable.

They carry less bandwidth than both fiber optic and twisted pair cable.

Now let's move into a different type of guided transmission media.

### (3) = Optical Fiber

Optical fiber use light waves for transmission. Cross talk, EMI and transmission attenuation aren't issues with optical fiber. These cables are well-suited for voice, data and video transmission. Optical fibers are the



most Secure of all the cable media. installation and maintenance are difficult and costly. Fiber optic cables have greater transmission speed, high bandwidth and the signal can travel longer distance when compared to coaxial and twisted pair cable though the cost of optical fiber cable is less compared to coaxial and twisted pair cable the additional optical components needed for installation make fiber optic the costliest of all the cable.