AU-6916

B.Sc.(Hon's) Computer Science (Fifth Semester) Examination, 2014

Paper name-Internet Application

Paper code-PCSC 501

Model Answer

Time : Three Hours]   [Maximum Marks:30

Note: Question Number 1 is Compulsory. Answer any four from the remaining.

Q.1   (10 X1=10 Marks)

(i)   Explain features of HTML.

Ans.

Features of HTML

    1. Simple

    2. Supports all types of documents

    3. Need no compilation

    4. Supported by browser

    5. Compatibility with other web tools

    6. Extendibility

    7. Internet Base

    8. Developing intranet or extranet sites

    9. Developing help files

    10. Developing network applications

    11. Developing kiosk application

(ii)   What is the role of server?

Ans.

The function of a computer server is to store, retrieve and send computer files and data to other computers on a network. Many businesses use a local network to connect a number of computers. On a

larger scale, the worldwide computer network known as the Internet depends on a large number of servers located around the world. The files, data and functionality of a given website are based on servers.

<div align="center">

Or

</div>

Servers have more processing power, memory and storage than their client computers. The client is the computer that is not acting as the server and is requesting information from the server. When computers are connected in some physical or wireless way and sharing services or information, this is referred to as a computer network. A computer network requires at least two participants, with at least one of them acting as a client and at least one acting as a server.

(iii)   What are the necessities of using HTML forms?
Ans.

We are all familiar with forms on html web pages. For many different reasons people or companies are asking for our e-mail addresses, names and site URLs. Buying products on the Internet today is mostly a breeze and with the advent of security devices, the method used for submitting your details and hard earned money is usually performed via forms.

<div align="center">

or

</div>

Forms can also be used for a dynamic presentation. The Free Buttons and Frames pages with 'How to' tutorials involve a simple interface to change the background colour when viewing the images. This way, forms and server scripts can be used if the viewers browser cannot handle Java Script (and there are many).

(iv)   What is meant by loop back address?
Ans.

Loopback address is a special IP number (127.0.0.1) that is designated for the software loopback interface of a machine. The loopback interface has no hardware associated with it, and it is not physically connected to a network.

(v)   Write down the main attributes of tables?
Ans.

HTML Table

This section lists the tags often used with HTML tables: <table>, <tr>, and <td>.

<table>

The following attributes are commonly used to define the properties of this table:

- **Width**
- **Border**
- **Cellspacing**
- **Cellpadding**
- **Bgcolor**

<tr>

The <tr> tag specifies the presence of a row. The following attributes are commonly used to define the properties of this row:

- bgcolor
- height
- rowspan

<td>

The following attributes are commonly used to define the properties of this column:

- valign
- width
- bgcolor
- colspan

(vi)   Explain outlook express?

Ans.

Outlook Express is an email program developed by Microsoft that lets you store, manage, send and receive email messages.

(vii)   What are the tools to surf a net?

Ans.

Internet Explorer, Desktop (Computers have different sets of tools that use such as the hardware and the software. Each has its own categorize area such as: software has the software, the application software, system software, and the hardware has input devices, output devices, CPU and RAM, storage devices, telecommunication devices, hardware connections. These are the different areas of a computer that will give you a proper ethics to work faster and better) etc.

(viii)   What are the tips to develop good web pages in HTML?

Ans. (Choose any two)

- Make sure your web pages are accessible.
- Take steps to minimize security risks.
- Use web server statistics to determine how popular your site is.
- Utilize dynamic technologies styles.
- Be aware of web development software and how to use it efficiently to enhance your web site.
- Use XHTML, DOM Scripting, and CSS to make your site browser and rule independent.
- Choose an appropriate database to ensure it is more dynamic, and does the job of many static pages.
- Use image editors for fast-loading graphics.
- Learn to use planning and project management techniques to build great web sites with large teams.
- Use new technologies like XML, DTDs, and XSL to help your application communicate with other platforms in the most flexible manner.
- Research what keywords people use most often on search engines that pertain to your products or services; use these keywords as text in the design to increase website traffic.
- "**Keep It Simple**" - 99% of all web designers use too many graphical images and programs like Java, Flash, etc. which results in lower rankings and less traffic..
- Web pages, like a spread sheet, are made using cells and tables. Use as few cells and tables in your web design as possible.
- Create good Meta Tags. Each page should have different keywords in the Title and the Description Meta Tag.
- Limit the number of times that you repeat words in your Keyword Meta Tag.
- Place your important keywords at the top of the page as text headers.
- Your most important page and keywords should be on the first page of a website.

- Frames based websites should only be used for Intranet (a site only for company employees) and not for Internet.
- Do NOT include pages that re-direct (a page that automatically sends you to another page) people to other pages.
- Run an analysis program to count the number of times keywords are used in the first 7500 characters of computer code.
- Limit your use of services that automatically submits your URL to the top 10 search engines.
- When finished with a page, run a spell checking program and then compress the html code.
- Keep track of your search engine rankings and website traffic.
- Once a website is indexed, a good web designer should go back and improve pages that didn't get high rankings on key words.
- Every 3 months you should make a small change on each web page. Search engines like to see that changes are being made to a site and that it just isn't sitting there for years with no upgrades.

(ix) What do you mean by tag? What are its types?

Ans.

HTML codes are referred to as tags. Tags open with a less-than sign and close with a greater-than sign. The less-than and greater-than signs are called brackets.

<Tag>

Tags are instructions that are embedded directly into the text of a HTML document.

Each HTML tag describes that the browser should do something instead of simply displaying

Types of Tag

There are two kinds of HTML tags; paired and unpaired.

(x) List the important HTML tags?

Ans.

The basic tags include <html>, <title>, <meta>, and <body>.

Paired Tags	Function
<html>, </html>	Indicates the page is coded in HTML.
<head>, </head>,	Indicates part of the document that contains Information about the page.
<title>, </title>	Always located in the head, the title provides the name of the document to be displayed by search engines and on browser title bars.
<body>, </body>	Indicates part of the document that contains Formatted text, images, and links.
<hn>,</hn> Where n is a number between 1 to 6.	Headings are used to arrange the contents in a systematic way.
<a href>, 	Links to another Web page or another location in the current Web page.
<Ol>,</Ol>	Ordered list (1, 2, 3, 4....); used with the <Ii> tag.
,	Unordered list (bullet points); used with the <Ii> tag.
<P></P>	Paragraphs may consist of a single sentence or more than one sentences including punctuation marks and blank space.
Unpaired Tag	Function
<img>	Inserts an image into your text. See below for more information.
 	Line break; moves subsequent text to the beginning of the line.
<hr>	Horizontal rule; draws a line across the width of the page.

(4 X 5 =20 Marks)

Q.2   What is an E-mail also describe its components?

Ans.

Email is short for 'electronic mail'. Similar to a letter, it is sent via the internet to a recipient. An email address is required to receive email, and that address is unique to the user. Some people use internet-based applications and some use programs on their computer to access and store emails.

Key benefits and features of using email

- It's quick – your recipient receives your email as soon as they go online and collect their mail.

- It's secure.

- It's low cost.

- Photos, documents and other files can be attached to an email, so that more information can be shared.

- One email can be sent to more than one recipient at a time.

How E-mail Works: To send e-mail, one needs a connection to the Internet and access to a mail server, which forwards the mail. The standard protocol used for sending Internet e-mail is called SMTP (Simple Mail Transfer Protocol). It works in conjunction with POP (Post Office Protocol) and IMAP (Internet Mail Access Protocol) servers.
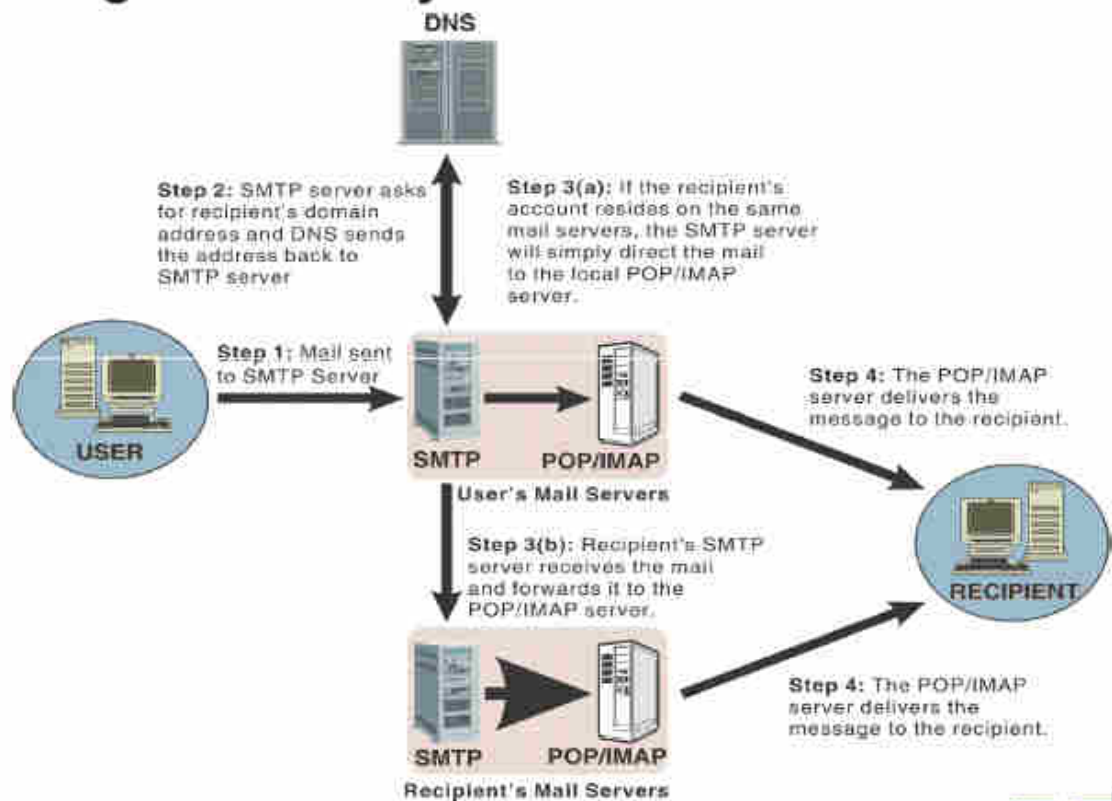

Figure: Working of Email System

Checking E-mails: One can read received e-mails by opening his/her e-mail account.

E-mail is text messages that may contain files, images, or other attachments sent through a network to a specified individual or group of individuals. The first e-mail was sent by Ray Tomlinson in 1971. By 1996, more electronic mail was being sent than postal mail. Below is an example and breakdown of an Internet e-mail address.

Support1234@computerhopes.com

The first portion all e-mail addresses is the alias, user, group, or department of a company. In our above example support is the Technical Support department at Computer Hope.

Next, the @ (at sign) is used as a divider in the e-mail address and is always required for all SMTP e-mail addresses and was first used by Ray Tomlinson.

Finally, computerhope.com is the domain name of where the user belongs.

How to send and receive e-mail

To send and receive e-mail messages you can use an e-mail program, also known as an e-mail client such as Microsoft Outlook or Mozilla Thunderbird. When using an e-mail client you must have a server that stores and delivers your e-mail this service is provided by your ISP but can also be a service provided by another company. The e-mail client will connect to the server to download all new e-mail and deliver any unsent e-mail.

An alternative way of sending and receiving e-mail and a more popular solution for most people is an online e-mail service or webmail such as Hotmail, Gmail, and Yahoo Mail. Many of the online e-mail services including the above examples are free or have a free account option.

Writing an e-mail

When writing a new e-mail message a window similar to the example below will appear. As can be seen, several fields are required when sending an e-mail, the From or Reply-To is a field that is automatically filled out and is where the e-mail returns if a reply is made. Next, the CC or Carbon Copy field allows you to send a copy of the message to another e-mail address, but is not a required field. The To field is where you type the e-mail address of who you are sending the e-mail address. Next, the subject line although not required should be a few words describing what the e-mail is about. Finally, the message body will be the location you type your message and is what will contain your signature.

E-mail Attachments: To send or receive files like compressed (.ZIP) files or any executable (.EXE) files you need to 'attach' them in your e-mails.

Q.3   Differentiate between LAN and WAN?

Ans.

	LAN	WAN
Definition	LAN (Local Area Network) is a computer network covering a small geographic area, like a home, office, school, or group of buildings.	WAN (Wide Area Network) is a computer network that covers a broad area (e.g., any network whose communications links cross metropolitan, regional, or national boundaries over a long distance).
Speed	High speed (1000 mbps)	Less speed (150 mbps)
Data transfer rates	LANs have a high data transfer rate.	WANs have a lower data transfer rate as compared to LANs.
Example	Network in an organization can be a LAN	Internet is a good example of a WAN
Technology	Tend to use certain connectivity technologies, primarily Ethernet and Token Ring	WANs tend to use technologies like MPLS, ATM, Frame Relay and X.25 for connectivity over longer distances
Connection	One LAN can be connected to other LANs over any distance via telephone lines and radio waves.	Computers connected to a wide-area network are often connected through public networks, such as the telephone system. They can also be connected through leased lines or satellites.
Components	Layer 2 devices like switches and bridges. Layer 1 devices like hubs and repeaters.	Layers 3 devices Routers, Multi-layer Switches and Technology specific devices like ATM or Frame-relay Switches etc.
Fault Tolerance	LANs tend to have fewer problems associated with them, as there are smaller number of systems to deal with.	WANs tend to be less fault tolerant as they consist of large number of systems.
Data Transmission Error	Experiences fewer data transmission errors	Experiences more data transmission errors as compared to LAN

Ownership	Typically owned, controlled, and managed by a single person or organization.	WANs (like the Internet) are not owned by any one organization but rather exist under collective or distributed ownership and management over long distances.
Set-up costs	If there is a need to set-up a couple of extra devices on the network, it is not very expensive to do that.	For WANs since networks in remote areas have to be connected the set-up costs are higher. However WANs using public networks can be setup very cheaply using just software (VPN etc).
Geographical Spread	Have a small geographical range and do not need any leased telecommunication lines	Have a large geographical range generally spreading across boundaries and need leased telecommunication lines
Maintenance costs	Because it covers a relatively small geographical area, LAN is easier to maintain at relatively low costs.	Maintaining WAN is difficult because of its wider geographical coverage and higher maintenance costs.
Bandwidth	High bandwidth is available for transmission.	Low bandwidth is available for transmission.
Geographical Area	LAN covers 100 m	WAN covers more than 100 m
Congestion	Less congestion	More congestion
Spread	The network is spread to a very small location	The network is spread world wide

Q.4   What are important features of HTML?

Ans.

Features of HTML

1. Simple: It is simplest web developer tools. All the tags are self explanatory i.e. their meaning is clear from their name. For, example 'B' means bold, 'I' means italics and U means underline.

2. Supports all types of documents: It can support all types of documents like text documents, sound and multimedia.

3. Need no compilation: The languages like C/C++ requires compilation before doing anything with programs but HTML codes are automatically complied and results are displayed on screen.

4. Supported by browser: All most all types of browsers supports the HTML code like Microsoft internet explorer 'and Netscape navigation' gold.

5. Compatibility with other web tools: The code written in HTML can be pasted

in other web tools and run efficiently without any change. For example HTML code can be pasted in Front page 2000, flash, dream weaver etc.

6. Extendibility: adding features in it can enhance The HTML code. We can extend it using DHTML etc.

7. Internet Base: It is the first web tool and all the Internet tools are based upon the idea of HTML.

8. Developing intranet or extranet sites: HTML is commonly used to develop intranet and extranet sites, which are accessed by company people from one or more locations.

9. Developing help files: It is used to develop on-line help files and help the developers to produce help documentation that is accessible from any computer and platform.

10. Developing network applications: It is used to develop all types of applications such as training programs interactive charts or databases that are available," from web.

11. Developing kiosk application: HTML can be used to create kiosk applications— which can run on stand-alone computers with touch-screen applications.

Q.5   Explain Chatting.

Ans.

On the Internet, chatting is talking to other people who are using the Internet at the same time you are. Usually, this "talking" is the exchange of typed-in messages requiring one site as the repository for the messages (or "chat site") and a group of users who take part from anywhere on the Internet. In some cases, a private chat can be arranged between two parties who meet initially in a group chat. Chats can be ongoing or scheduled for a particular time and duration. Most chats are focused on a particular topic of interest and some involve guest experts or famous people who "talk" to anyone joining the chat. (Transcripts of a chat can be archived for later reference.)

Types of chatting (Audio, Video, Text etc.)

Chatting is an online interactive communication mechanism that lets people to make a real time discussion with multiple people through the internet. Chatting can be a private chat with friends or relatives or a general chat with even unknown persons. People can chat with their relatives and friends irrespective of their locations. Students use chatting as a means to learn from instructors. Several companies use chatting methods for product support as well as for technical support. Chatting is also used for entertainment, training as well as for recreation. The subject of discussion in chat rooms can be different nature and can vary from highly technical style to leisurely talking. Previously, chatting was purely in text from. People located at different places typed their conversation through the keyboard of the computer. What is typed by one person in the computer is displayed on the screens of others taking part in the chat. Text based chatting is faster compared to graphical based chat systems. As the technology improved, the text based chatting became obsolete and now we have multimedia chat. Multimedia chat enables the use of different media such as **audio, video, text** etc. this type chatting enables people to have a live conversation and they can communicate with the help of live video through the Internet by using suitable audio and video equipment. To make voice chat, computers must be fitted with speakers and, microphone, special programs needed for voice chat must also be installed in the computer. Using video cameras along with computers, users can also make video chat. This type of chatting helps the chatters to see each other while talking. Besides cameras, suitable programs must also be installed in computers for video chatting. Basically, there are three forms of chatting namely Internet Relay Chat, web based chat and instant messaging. Internet Relay Chat requires the use of chat client applications in computers. Most websites offer web based chatting which is lighter in nature. Instant messaging is a private type of talking.

Chatting systems evolved from the earlier bulletin board services. It is possible for a computer to connect to a bulletin board system using modems. People used to make discussions and chatting through bulletin board systems. Later several online services came into existence. Now several instant messaging applications are available for use.

Chat Room Etiquette (Chatiquette) (Choose any two)

Just as in real life, there are some things that you do and some things that you don't do in chatting. If you are relatively new to chatting, reading the following will help you understand the unwritten rules or "etiquette" of chat and help you to communicate with others.

- **Don't talk in CAPITAL LETTERS**

  In a chatroom, using a lot of CAPITALS or UPPER CASE is seen as shouting. Many people find it annoying when a user types entirely in capitals.

- **Don't join a chatroom and then leave without saying something**

  It is considered impolite to enter a chatroom and then leave without saying something.

- **Don't idle or lurk in a chatroom**

  When you are in a chatroom, do take part in the conversation. If you are going to be away from your computer for a short time, tell the other users. If you are a beginner, be polite and say something like, "I am new to chatting. Can I watch quietly for a few minutes?"

- **Be patient**

  Try to be patient and wait if a user is slow to respond to you during a conversation. Remember that this is a person and they may have other things to do at the same time.

- **Don't use excessive colours/ASCII art**

  Don't use large multi-line ASCII art or excessive colours. In some chatrooms it could be considered a flood and you might be kicked out.

- **In smaller chatrooms, ask if you are welcome**

  When you enter a chatroom that has only a few users, ask if it is a private chatroom, and if you are welcome there.

- **Be friendly. Be polite. Be considerate**

  Remember that these are real people you are chatting with. They may have different opinions to you and come from very different cultures. Treat them properly and respect their opinions, and they will treat you the same.

- **No discussion of any illegal activity or threats of violence**

  (i.e. threats of suicide, self-harm, or physical harm). Discussion of medical marijuana is allowed as long as discussions have a medical focus.

- No use of explicit, racist, obscene or vulgar language, images or messages.
- No posts that attack, insult, flame, defame, or abuse others

  Respect other members' opinions regarding treatment decisions. Decisions about health and well-being are highly personal choices. We should respect all points of view. Flaming will not be tolerated.

- No advertising or links to advertising or "Spam" is permitted.
  - ❖ Advertising or spam is defined as posting a link for the purpose of selling, soliciting or promoting something.
  - ❖ Links promoting fundraising, advocacy, etc. are not permitted.
  - ❖ Links to personal blogs/homepages are allowed in member profiles and signatures
  - ❖ Sharing of links to helpful and relevant web sites and resources is allowed if they are not used for a promotional purpose.

- No posts regarding research studies, surveys, or clinical trials without prior approval from the forum administrator.
- No posts of copyrighted material, lengthy articles, or posts of an overtly political or religious nature (ie. proselyting).
- Do not post offline personal contact information (i.e. your home address, phone numbers etc.) and do not ask for personal information from others. This is to protect your security and identity.
- If you are a medical professional, do not use the forums to distribute professional medical advice and/or promote your services.

GUIDELINES: (Choose any two)

1. Check for open topics. Before posting a new topic, please check to see if there is already a topic open on the subject.
2. Ignore bothersome members. If there is someone on the forum that bothers you, select the Ignore button at the top right corner of the post.
3. Report posts that violate the rules. Do this by selecting the Admin alert button at the top right corner of the post.
4. Use good judgment. NEVER rely on information or opinions exchanged to replace necessary, personal consultation(s) with qualified health or medical

professionals to meet your individual health or medical needs. Remember that what's right or has worked for one person may not be what's right for you.

5. **Lend a helping hand.** A bit of compassion can go a long way toward helping people with life's challenges and reaching out can help alleviate feelings of loneliness.

6. **Don't be afraid to share.** If you're feeling alone or hurting, don't be afraid to share your fears and tears. If you're rejoicing about the results of a recent medical test or treatment, share that too.

7. **Welcome new members.** Help new folks "learn the ropes" about how to find information and resources, save time, and how to get involved.

8. **Use descriptive titles for new posts.** Avoid "generic" post subjects like "Help" or "Question". You will receive a better response to your posts by making your title more descriptive about the content of your post.

9. **Be respectful of moderators** in both the forums and any private communications.

10. **Stay on topic.** Posts which are not relevant to the forum topic may be deleted.

11. **Keep posts family friendly.** If it shouldn't be viewed by minors, then it shouldn't be posted to the forums or chat rooms.

Q.6   Write note on CGI Scripting?

Ans.

Common Gateway Interface (CGI) is a standard method used to generate dynamic content on Web pages and Web applications. CGI, when implemented on a Web server, provides an interface between the Web server and programs that generate the Web content. These programs are known as *CGI scripts* or simply *CGIs*; they are usually written in a scripting language, but can be written in any programming language.

The common gateway interface (CGI) is a standard way for a Web server to pass a Web user's request to an application program and to receive data back to forward to the user. When the user requests a Web page (for example, by clicking on a highlighted word or entering a Web site address), the server sends back the requested page. However, when a user fills out a form on a Web page and sends it in, it usually needs to be processed by an application program. The Web server typically passes the form information to a small application program that processes the data and may send back a confirmation message. This method or convention for passing

data back and forth between the server and the application is called the common gateway interface (CGI). It is part of the Web's Hypertext Transfer Protocol (HTTP).

If you are creating a Web site and want a CGI application to get control, you specify the name of the application in the uniform resource locator (URL) that you code in an HTML file. This URL can be specified as part of the FORMS tags if you are creating a form. For example, you might code:

<FORM METHOD=POST ACTION=http://www.mybiz.com/cgi-bin/formprog.pl>

and the server at "mybiz.com" would pass control to the CGI application called "formprog.pl" to record the entered data and return a confirmation message. (The ".pl" indicates a program written in PERL but other languages could have been used.)

The common gateway interface provides a consistent way for data to be passed from the user's request to the application program and back to the user. This means that the person who writes the application program can makes sure it gets used no matter which operating system the server uses (PC, Macintosh, UNIX, OS/390, or others). It's simply a basic way for information to be passed from the Web server about your request to the application program and back again. Because the interface is consistent, a programmer can write a CGI application in a number of different languages. The most popular languages for CGI applications are: C, C++, Java, and PERL.

Q.7 **What is transmission media? How communication satellites are used?**

Ans. (Choose most appropriate points according to marks allotted)

A **transmission medium** (plural *transmission media*) is a material substance (solid, liquid, gas, or plasma) which can propagate energy waves. For example, the transmission medium for sound received by the ears is usually air, but solids and liquids may also act as transmission media for sound.

Transmission media are the physical pathways that connect computers, other devices, and people on a network. Each transmission medium requires specialized network hardware that is compatible with that medium, and most networks need to use combination of transmission media types selected based on the network's needs and prevailing conditions.

The term **transmission medium** can also refer to the technical device which employs the material substance to transmit or guide the waves. Thus an optical fiber or a copper cable can be referred to as a

transmission medium. The absence of a material medium (the vacuum of empty space) can also be thought of as a transmission medium for electromagnetic waves such as light and radio waves. While material substance is not required for electromagnetic waves to propagate, such waves are usually affected by the transmission media through which they pass, for instance by absorption or by reflection or refraction at the interfaces between media.

Types of Transmission media:

The means through which data is transformed from one place to another is called transmission or communication media. There are two categories of transmission media used in computer communications.

- GUIDED MEDIA

- UNGUIDED MEDIA

1. **GUIDED MEDIA:** Bounded media are the physical links through which signals are confined to narrow path. These are also called guide media. Bounded media are made up o a external conductor (Usually Copper) bounded by jacket material. Bounded media are great for LABS because they offer high speed, good security and low cast. However, some time they cannot be used due distance communication. Three common types of bounded media are used of the data transmission. These are:

- Coaxial Cable.
- Twisted pair cable.
- Fibre optics

2. **UNBOUNDED MEDIA:** Unguided transmission media are methods that allow the transmission of data without the use of physical means to define the path it takes. Unguided media provide a means for transmitting electromagnetic waves but do not guide them; examples are propagation through air, vacuum and seawater. For unguided media, the bandwidth of signal produced by the transmitting antenna is more important than the medium in determining transmission characteristics. One key property of signals transmitted by antenna is directionality.

Examples of Unguided media are:

- microwave
- radio waves
- infrared waves
- Satellites

Satellites

`When used for communications, a satellite acts as a repeater. Its height above the Earth means that signals can be transmitted over distances that are very much greater than the line of sight. An earth station transmits the signal up to the satellite. This is called the up-link and is transmitted on one frequency. The satellite receives the signal and retransmits it on what is termed the down link which is on another frequency.
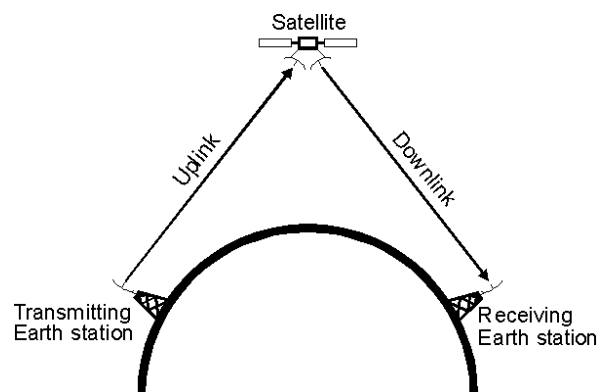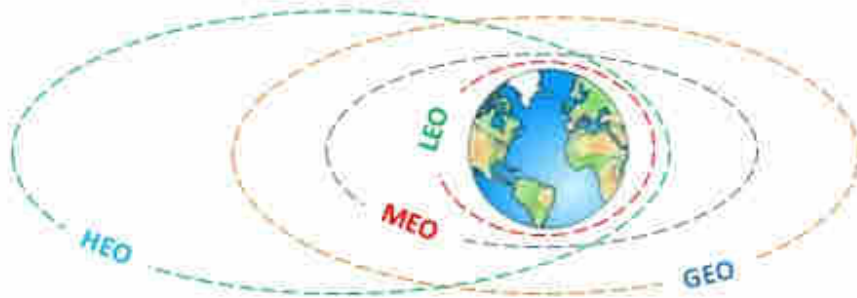

Figure: Using a satellite for long distance communications

Types of Satellite Orbits

There are 4 types of orbits, they are:

1. GEO (Geo-stationary earth orbit)
2. MEO (medium earth orbit)
3. LEO (Low earth orbit) and
4. HEO (Highly elliptical orbit)

TYPES OF SATELLITE ORBITS

I. Geo-Stationary Earth Orbit

These satellites have almost a distance of 36,000 km to the earth.

E.g. All radio and TV, whether satellite etc, are launched in this orbit.

Advantages of Geo-Stationary Earth Orbit

1. It is possible to cover almost all parts of the earth with just 3 geo satellites.
2. Antennas need not be adjusted every now and then but can be fixed permanently.
3. The life-time of a GEO satellite is quite high usually around 15 years.

Disadvantages of Geo-Stationary Earth Orbit

1. Larger antennas are required for northern/southern regions of the earth.
2. High buildings in a city limit the transmission quality.
3. High transmission power is required.
4. These satellites cannot be used for small mobile phones.
5. Fixing a satellite at Geo stationary orbit is very expensive.

II. Medium Earth Orbit

Satellite at different orbits operates at different heights. The MEO satellite operates at about 5000 to 12000 km away from the earth's surface.

These orbits have moderate number of satellites.

Advantages of Medium Earth Orbit

1. Compared to LEO system, MEO requires only a dozen satellites.
2. Simple in design.

3. Requires very few handovers.

Disadvantages of Medium Earth Orbit

1. Satellites require higher transmission power.

2. Special antennas are required.

III. Low Earth Orbit

LEO satellites operate at a distance of about 500-1500 km.

Advantages of Low Earth Orbit

1. The antennas can have low transmission power of about 1 watt.

2. The delay of packets is relatively low.

3. Useful for smaller foot prints.

Disadvantages of Low Earth Orbit

1. If global coverage is required, it requires at least 50-200 satellites in this orbit.

2. Special handover mechanisms are required.

3. These satellites involve complex design.

4. Very short life: Time of 5-8 years. Assuming 48 satellites with a life-time of 8 years each, a new satellite is needed every 2 months.

5. Data packets should be routed from satellite to satellite.

IV. Highly Elliptical Orbit

This orbit is made for satellites that do not revolve in circular orbits, only a very few satellite are operating in this orbit.

Advantages of satellite communication: (Choose only points name)

Availability : The biggest advantage of satellite Internet access is its availability compared to other Internet connection types. Satellite Internet access is a way for those who do not have access to terrestrial broadband connections such as cable or DSL to have access to high-speed Internet access. Satellite also is one of the only ways to receive Internet service in areas where telephone lines are not available.

Speed : Satellite Internet access is much faster than dial-up, with entry-level service tiers typically providing approximately 1 mbps download speeds--nearly 18 times faster than a dial-up modem. Faster speeds are generally available at higher service tiers. In general, the

highest speeds available to home satellite Internet customers are slightly slower than the highest speeds offered by cable and DSL providers. Additionally, many satellite providers limit the amount of data that can be downloaded during short time periods to curb frequent large file transfers.

Latency : Satellite Internet connections are high-latency, meaning that a great deal of time is required for packets of information to travel to the satellite and back. The total delay can amount to about one second from the time that you send a request to the Internet to the time that a reply is received. Satellite Internet providers use various technologies to make this delay less noticeable to the end user and create an acceptable experience for browsing the Web. However, the latency makes a satellite Internet connection unsuitable for high-speed gaming.

Reliability : Home-based satellite Internet connections are generally no less reliable than terrestrial broadband. However, all satellite communication is subject to interruption during periods of heavy snow or rainfall. Talk to other customers about their experiences if you live in an area where either of these are common. The likelihood of weather-related interruptions is lessened with a larger satellite dish, which some providers offer.

Cost : The cost of entry for a satellite Internet connection is quite high. The equipment costs several hundred dollars to purchase, and some types of installations incur additional fees. Additionally, the monthly cost for satellite Internet tends to be slightly higher than the cost of cable or DSL. There are ways of reducing the up-front cost. The equipment can be leased rather than purchased, and discounts or rebates may be available. Sometimes, installation fees are included in the lease price.

Disadvantages of Satellite communication

- Communication through satellite is highly costly.
- Security measures are required to prevent the unauthorized tapping of information.

Q.8 Write a HTML program to print the following chemical equations:

$$C_2H_5OH + PCl_5 + C_2H_5Cl + POCl_3 + HCL$$

$$4H_3PO_3 = 3H_3PO_4 + PH_3$$

$$PCl_3 + Cl_2 = PCl_5$$

Ans.

<HTML>

<HEAD>

<TITLE> Chemical Equation </TITLE>

</HEAD>

<BODY>

<P>C₂H₅OH+PCL₅+C₂H₅Cl+POCl₃+HCL</P>

<P>

4H₃+PO₃=3H₃PO₄+PH₃ </P>

<P> PCl₃+Cl₂=PCl₅ </P>

Result

$$C_2H_5OH + PCl_5 + C_2H_5Cl + POCl_3 + HCL$$

$$4H_3PO_3 = 3H_3PO_4 + PH_3$$

$$PCl_3 + Cl_2 = PCl_5$$

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