Chapter 1: The Internet

SUMMATIVE ASSESSMENT

Type A: Multiple Choice Questions (MCQ)

(i) (d) All of these

(ii) (c) 1969

(iii) (c) ARPAnet

(iv) (a) Backbone

(v) (d) 1500 Characters

(vi) (a) TCP

(vii) (d) All of these

(viii) (b) IETF

(ix) (d) ICANN

(x) (a) Dial-up

(xi) (b) HTTP

(xii) (b) Client application

(xiii) (c) Uniform Resource Locator

(xiv) (a) Domain Name System

Type B: State Whether the Following Statements are True or False

(i) False

(ii) True

(iii) False

(iv) True

(v) False.

(vi) False

(vii) True

(viii) False

(ix) True

(x) True

(xi) False

(xii) True

Type C: Very Short Answer Type Questions

(i) Internet is the largest network of computers spread across the world. It is also called a 'Network of Networks' as it connects millions of dissimilar networks around the world.

(ii) WWW, E-mail, chatting, video conferencing, etc are few of the useful facilities of Internet.

(iii) US Department of Defence sponsored the ARPAnet project.

(iv) The concept of World Wide Web developed by Tim Berners Lee in 1989.

(v) Backbone connects two or more dissimilar networks with the Internet.

(vi) Server is a resourceful machine in the network which provides the requested resources to the client machine.

(vii) TCP/IP stands for Transmission Control Protocol/Internet Protocol.

(viii) Modem can be of two types: External and Internal.

(ix) BSNL, Airtel, Tata Indicom, Reliance, MTNL, etc. are some of the well known Internet Service Providers in India.

(x) Web browser application software in the client machine is used for interacting with web server.

(xi) World Wide Web Consortium (W3C) organisation develops the web standards for World Wide Web (WWW).

(xii) Data transfer rate in broadband technology is the in the range of 256 kbps to 8 mbps.

(xiii) HTML is used to design web pages.

Type D: Short Answer Type Questions

(i) Internet is the largest network of computers spread across the world. It is actually the network of many smaller networks owned by the various government / non-government organisations, universities, business communities, etc. providing them facilities to communicate and share their resources. That's why it is known as Network of Networks.

(ii) The development of this network was started in 1969 by an agency sponsored by the US Department of Defence called ARPA (Advanced Research Project Agency) and the first successful network of computers ARPAnet which later provided connectivity to many of the universities.

MILNET (Military Network) was separated from ARPAnet in 1983 as NSFnet (National Science Foundation Network) was started in 1986 by the Federal Agency named National Science Foundation, which was more capable and resulted into the birth of present Internet.

(iii) WWW or World Wide Web is an information retrieval service of Internet. It is a massive source of information available in the form billions of files stored on thousand of web servers across the world.

(iv) An Internet Backbone is a central high speed interconnecting structure which connects the various dissimilar networks whereas 'Gateway' is a special network device which connects the individual networks to the backbone such that they can communicate with each other.

(v) Network protocols are the set of communication rules followed by the systems while exchanging the information across the network.

Transmission Control Protocol (TCP) used to create data packets to be sent at the source computer. It is also responsible to reassemble the received packets at the destination computer to the original information. While Internet Protocol (IP) assigns the address of destination computer to each packet and enroute them over the network to their destination.

(vi) An ISP is a company or organisation which provides access to the Internet and its services to its user against a fee. These companies setup their own network by employing a powerful server computer which is connected to the Internet through some communication gateway. The ISP creates an account of the user in its server and assigns a unique user ID and password for accessing the Internet services.

(vii) IETF (Internet Engineering Task Force) looks after the technical issues and development of new standards for the working of Internet whereas IRTF (Internet Research Task Force) look into the long term research issues like Internet Protocols, applications, architectures and technologies related to Internet.

(viii) Different ways to connect the Internet are:

- ○ Dial-up Connection: In this basic telephone network is used to connect with the ISP.
- ○ Broadband Connection : It is a high speed Internet which is established using telephone lines without disturbing the voice connection.
- ○ Wireless Connection: Wireless internet services like WiFi, Wi-Max, Satellites use radiowaves or microwaves to transmit the data.

(ix) Web server is one of the powerful computers on the internet which is capable of providing the requested web pages to the client machine. It hosts large number of HTML pages and other resources and it runs a special server program to handle the client request and the errors if encountered.

(x) Web page is an individual document on the web server which contains related information in the form of text, images, videos, sounds, animations, etc. whereas website is a collection of many related web pages linked with each other using hyperlinks stored in web servers.

(xi) The three parts of URL are:

- ○ Type of the server or protocol.
- ○ Address of the Web Server on which the resource is located.
- ○ The location/path of the resources, where it is stored on that web server.

Structure of a URL: is protocol://address/path

(xii) Com-commercial

Org- organisation

Gov- government

Au- Australian

(xiii) The Domain Name System (DNS) is a character based naming system which is translated into corresponding IP addresses to locate the specific resources on the network.

Type E: Long Answer Type Questions

(i) Internet works on the Client-Server technology as the system called Client sends a request to the source system called Server for the required information and the server responds to the client by sending the required information. The information is transferred from one system to another using Packet Switching technique. In this technique the information is divided into small packets of upto 1500 characters each. These packets are numbered serially, i.e., 1, 2, 3, 4, 5, … The address of the recipient computer is attached with each of these packets. The packets reach the destination computer in random order. This implies that the first packet that arrives may be packet number 4 or packet number 1. Once all the packets are received at the destination these are assembled again to get the original information.

(ii) **TCP/IP:** Transmission Control Protocol (TCP) is responsible to create data packets to be sent at the source computer. It is also responsible to reassemble the received packets at the destination computer to the original information. While Internet Protocol (IP) assigns the address of destination computer to each packet and enroute them over the network to their destination.

HTTP: Hyper Text Transfer Protocol is a communication protocol used by the client machine to send the request to the web server for a web page and at server end, it helps to transfer the requested page on the client machine.

FTP: File Transfer Protocol is used to transfer files on the network.

(iii) World Wide Web is based on the Client-Server technology wherein the computer which sends a request to view the web document is called Client and the system which fulfills the client

request by sending the required page is called Server. It is the web browser application at the users end, which sends the request to the server for a specific web page with the help of communication protocol HTTP.

The HTTP server hosting the requested page sends the same to the client machine where it is displayed in the web browser. These pages are interconnected with each other through the hyperlinks which help the user to quickly navigate from one page to another.

(iv) It is a unique name that is used to identify a website on the web server. These are also known as Domain Names. The web address is a combination of two or more parts i.e., domain name and domain extension. For example, in the web address grambooks.com, grambooks is the domain name which the user choose as per its choice whereas the second part 'com' is the domain extension which is predefined and is used to recognise the domain type. There are many different domain extensions to choose from like:

Domain Extension	Description
.com	Commercial website
.org	Non-profit making organisation
.net	Network resource organisation
.edu/.ac	Educational/academic website
.mil	Military site
.gov	Government site

Sometimes, the domain name extension can be country specific which is made up of two characters that represent the name of country to which that domain belongs to. For example, in the web address www.cbse.nic.in, the last two character 'in' stands for India. Some other country specific domain extensions are:

Domain Extension	Countries
.ae	United Arab Emirates
.au	Australia
.ca	Canada
.cn	China
.de	Germany
.in	India
.jp	Japan
.lk	Sri Lanka
.pk	Pakistan
.ru	Russia
.uk	United Kingdom
.us	United States

This system of identifying the web locations is called Letter Addressing System or popularly known as Domain Name System (DNS).

Type F: Application Oriented Questions

(i) Broadband or WiMAX technology can be used to access internet services.

For using Broadband service they needs modem and a switch to share the internet while a WiMAX receiver is required to receive the wireless signals.

(ii) Do as per your available net connection.

(iii) **Transmission Control Protocol (TCP):** IT is responsible to create data packets to be sent at the source computer. It is also responsible to reassemble the received packets at the destination computer to the original information. While Internet Protocol (IP) assigns the address of destination computer to each packet and enroute them over the network to their destination.

HTTP: Hyper Text Transfer Protocol is a communication protocol used by the client machine to send the request to the web server for a web page and at server end, it helps to transfer the requested page on the client machine.

Internet Service Provider (ISP): An ISP is a company or organisation which provides access to the Internet connectivity to the users.

IIS: Internet Information Services, a set of Internet-based services for servers using Microsoft Windows.

SMTP: Simple Mail Transfer Protocol is used to send mails on internet.

Type G: Fill in the Blanks

(i) Network

(ii) ARPAnet

(iii) WWW

(iv) Backbone

(v) Gateway

(vi) Client-Server

(vii) Protocol

(viii) Internet Protocol

(ix) Modulator-Demodulator

(x) Modulation

(xi) User ID, Password

(xii) Wi-Fi, WiMAX

(xiii) Tim-burner Lee

(xiv) Home page

(xv) Web