

**BALASORE SCHOOL OF ENGINEERING,
BALASORE**



STUDY MATERIAL

**BRANCH – COMPUTER SCIENCE & ENGG.
SUBJECT :- INTERNET & WEB TECHNOLOGY
SUBJECT CODE- TH-2
SEMESTER :- 5TH
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Short question - 2mrks**Q1-HOW MANY BITS ARE THERE IN IP ADDRESS? 2016****THERE ARE 32 BIT IN IP ADDRESS.****Q2-NAME TWO TYPE OF INTERNET CONNECTIVITY? 2018(s)-1(a),2019(s)-4-a****Dial-up connection****Leased connection****VSAT connection****Q3- What is CSS?**

Cascading Style Sheets, fondly referred to as CSS, is a simple design language intended to simplify the process of making web pages presentable.

CSS handles the look and feel part of a web page. Using CSS, you can control the color of the text, the style of fonts, the spacing between paragraphs, how columns are sized and laid out, what background images or colors are used, layout designs, variations in display for different devices and screen sizes as well as a variety of other effects.

Q4- What is RF link?

An RF module (short for radio-frequency module) is a (usually) small electronic device used to transmit and/or receive radio signals between two devices. In an embedded system it is often desirable to communicate with another device wirelessly. This wireless communication may be accomplished through optical communication or through radio-frequency (RF) communication.

Q5- What is Intranet?

Intranet is defined as private network of computers within an organization with its own server and firewall. Moreover we can define Intranet as:

- Intranet is system in which multiple PCs are networked to be connected to each other. PCs in intranet are not available to the world outside of the intranet.
- Usually each company or organization has their own Intranet network and members/employees of that company can access the computers in their intranet.
- Every computer in internet is identified by a unique IP address.
- Each computer in Intranet is also identified by a IP Address, which is unique among the computers in that Intranet.

Q6-What is Extranet?

An extranet is a communications network based on common internet protocols including the Transport Control Protocol and the Internet Protocol (TCP/IP), and typically used for information sharing. An extranet differs from an internet website in that access to the extranet is restricted to individual users possessing the appropriate login credentials. Additionally, an extranet can be subdivided into multiple specialty areas with each having different access requirements. Therefore, information and data can be isolated so that a business partner, customer, or vendor may only access the information pertinent to their operations, and prohibits access to other sensitive company data.

Q7-TELNET PROTOCOL?(2019(S)-7(ii))

- Telnet is a network protocol used on the Internet or local area networks to provide a bidirectional interactive text-oriented communication facility using a virtual terminal connection.

- User data is interspersed in-band with Telnet control information in an 8-bit byte oriented data connection over the Transmission Control Protocol (TCP).

Q8- Define POP3,IMP4.

POP3 (Post Office Protocol 3)

POP3 (Post Office Protocol 3) is the most recent version of a standard protocol for receiving e-mail. POP3 is a client/server protocol in which e-mail is received and held for you by your Internet server. Periodically, you (or your client e-mail receiver) check your mail-box on the server and download any mail, probably using POP3.

MP4 is a file format created by the Moving Picture Experts Group (MPEG) as a multimedia container format designed to store audiovisual data. The MP4 is largely replacing earlier multimedia file formats, and creating some changes in the way that vendors sell audiovisual files to the public.

MEDIUM TYPE QUESTION

Q1-DISCUSS DIFFERENT TYPE OF CONNECTIVITY IN COMPUTER NETWORK?2017-5/2015-5**Types of connectivity**

There are 3 types of connectivity, i.e.

- ❖ **Dial-up connection**
- ❖ **Leased connection**
- ❖ **VSAT connection**
- ❖ **Dial-up connection**
 - It is also known as, level-2 connection. This provides connection to internet, through a dial up terminal connection.
 - The computer, which, provides, internet access is known as, 'host' and the computer that, receives, the access is 'client' or 'terminal'.
 - The client uses, modem to access a host and acts as, directly connected terminal to the host. This type of connection is also known as, remote modem access.
 - Host carries, all the command, that, are type or a client machine and the client computer acts as a 'dumb' terminal, connected to remote host.
 - It is also divided into two types, i.e.
 - I) Shell connection
 - II)TCP/IP Connection
 - **Shell connection**
 - In shell connection, it doesn't support, graphics display.
 - **TCP/IP Connection**

The measure difference between shell and TCP/IP account is that, shell account only display, text and doesn't support graphics, whereas, TCP/IP displays both. ⇒ It is more popular internet connection.

Components for dial-up connection

- Computer.
- Modem
- Telephone line
- Sheller TCP/IP connection
- Internet client software.

❖ Leased connection

- It is also known as, direct internet access or level-3 connection.
- It is secure, dedicated and most expensive with leased connection.
- Computer is dedicatedly or directly connected to the internet using high speed transmission line.
- Leased inter connection are limited to large corporation and universities, who, could effort these costs.

❖ VSAT connection

- The full form of VAST is very small aperture terminal (VSAT).
- It is a two way satellite ground station.
- VSAT antenna with a dish antenna that, smaller than 3 meters.
- VSAT antennas range from 75 c.m. to 1.2 m.
- Data rates range from 4 kbit/s upto 4 mbit/s.
- VSAT are used to transmit narrow band data.
- Eg.- Transaction using credit cards.

Q2- What is IRC? Explain the function channel. 2018(s)1-b

Stands for "Internet Relay Chat." IRC is a service that allows people to chat with each other online. It operates on a client/server model where individuals use a client program to connect to an IRC server. Popular IRC clients include mIRC for Windows and Textual for OS X. Several web-based clients are also available, including KiwiIRC and Mibbit.

In order to join an IRC conversation, you must choose a username and a channel. Your username, also called a handle, can be whatever you want. It may include letters and numbers, but not spaces.

A channel is a specific chat group within an IRC network where users can talk to each other. Some networks publish lists of available channels, while others require you to manually enter channel names in order to join them. Channels always begin with a hashtag followed by a name that represents their intended chat topic, such as "#teenchat," "#politics," or "#sports". Some IRC channels require a password while others are open to the public.

When you join a channel, the chat window will begin displaying messages people are typing. You can join the conversation by typing your own messages. While channel members can type whatever they want, popular channels are often moderated. That means human operators or automated bots may kick people out of the channel and even ban users who post offensive remarks or spam the channel with repeated messages.

Q3- State and Explain JAVA SCRIPT? 2018(s)2-b

The programs in this language are called *scripts*. They can be written right in a web page's HTML and run automatically as the page loads.

Scripts are provided and executed as plain text. They don't need special preparation or compilation to run.

In this aspect, JavaScript is very different from another language called Java.

Today, JavaScript can execute not only in the browser, but also on the server, or actually on any device that has a special program called the JavaScript engine.

The browser has an embedded engine sometimes called a "JavaScript virtual machine".

Different engines have different "codenames". For example:

- V8 – in Chrome and Opera.
- SpiderMonkey – in Firefox.
- ...There are other codenames like "Trident" and "Chakra" for different versions of IE, "ChakraCore" for Microsoft Edge, "Nitro" and "SquirrelFish" for Safari, etc.

The terms above are good to remember because they are used in developer articles on the internet. We'll use them too. For instance, if "a feature X is supported by V8", then it probably works in Chrome and Opera.

Q4- Define www. What is browser? Write important components of a WWW. (2019(s)-6(B))

World Wide Web, which is also known as a Web, is a collection of websites or web pages stored in web servers and connected to local computers through the internet. These websites contain text pages, digital images, audios, videos, etc. Users can access the content of these sites from any part of the world over the internet using their devices such as computers, laptops, cell phones, etc. The WWW, along with internet, enables the retrieval and display of text and media to your device.

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There are 3 components of web:

1. **Uniform Resource Locator (URL):** serves as system for resources on web.
2. **HyperText Transfer Protocol (HTTP):** specifies communication of browser and server.
3. **Hyper Text Markup Language (HTML):** defines structure, organisation and content of webpage.

Q5- Write the Difference between authentication and authorization?

S.NO	AUTHENTICATION	AUTHORIZATION
1.	In authentication process, the identity of users are checked for providing the access to the system.	While in authorization process, person's or user's authorities are checked for accessing the resources.
2.	In authentication process, users or persons are verified.	While in this process, users or persons are validated.
3.	It is done before the authorization process.	While this process is done after the authentication process.
4.	It needs usually user's login details.	While it needs user's privilege or security levels.
5.	Authentication determines whether the person is user or not.	While it determines What permission do user have

Q7- Write the Difference between client side scripting and server side scripting?

CLIENT SIDE SCRIPTING	SERVER SIDE SCRIPTING
Source code is visible to user.	Source code is not visible to user because it's output of server side is a HTML page.
It usually depends on browser and it's version.	In this any server side technology can be use and it does not depend on client.
It runs on user's computer.	It runs on web server.
There are many advantages link with this like faster. response times, a more interactive application.	The primary advantage is it's ability to highly customize, response requirements, access rights based on user.
It does not provide security for data.	It provides more security for data.
It is a technique use in web development in which scripts runs on clients browser.	It is a technique that uses scripts on web server to produce a response that is customized for each clients request.
HTML, CSS and javascript are used.	PHP, Python, Java, Ruby are used.

Q8- Write the Difference between Internet, Intranet and Extranet?

Internet	Intranet	Extranet
It is a Global system of interconnected computer network.	It is a Private network specific to an organisation.	It is a Private network that uses public network to share information with suppliers and vendors.
Not regulated by any authority.	It is regulated by an organization.	It is regulated by multiple organization.
Thus content in the network is accessible to everyone connected.	Thus content in the network is accessible only to members of organization.	The content in the network is accessible to members of organization & external members with access to network.
It is largest in terms of number of connected devices.	It is small network with minimal number of connected devices.	The number of devices connected is comparable with Intranet.
It is owned by no one.	It is owned by single organization.	It is owned by single/multiple organization.
It is means of sharing information throughout the world.	It is means of sharing sensitive information throughout organization.	It is means of sharing information between members and external members.
Security is dependent of the user of device connected to network.	Security is enforced via a firewall.	Security is enforced via a firewall that separates internet & extranet.
Example: What we are normally using is internet.	Example: TCS using internal network for its business operations.	Example: HP and Intel using network for business related operations.
Users can access Internet anonymously.	Users should have valid username/password to access Intranet.	Users should have valid username/password to access Extranet.
Internet is unregulated and uncensored .	But Intranet is regulated by the organization policies .	Extranet is also regulated by contractual agreements between organizations.

LONG TYPE QUESTION

Q1-WHO IS ISP? IDENTIFY THE FACTOR FOR CHOOSING AN ISP? (2019(s)-5(b))

ISP

- **ISP stands for Internet Service Provider. An ISP is an organization that provides service for accessing, using or participating in the internet.**
- **ISP may be organized in various forms, such as commercial community owned, privately owned, etc.**
- **It refers to a company that provide, internet service including personal and business access to the internet for a monthly fee.**
- **An ISP is a company, that, supplies, internet connectivity to home and business customer. It support, one or more forms of internet access, ranging from traditional modem dial-up to DSL and cable modem broad band service to dedicated T1/T3 lines.**
- **More recently, wireless ISP that, offer internet access, through wireless LAN or wireless broad band network.**
- ❖ **Factors for choosing an ISP**
 - **Size**
 - **Reliability**
 - **Performance**
 - **Price**
- ❖ **Quality of service**
 - **Working hours**
 - **Technical support.**

Internet service providers in India

- **BSNL**
- **Aircel**
- **Airtel**
- **Docomo**
- **Vodafone**
- **Idea, etc.**

**Q2-DEFINE TCP/IP 5- LAYERING MODEL WITH SUITABLE EXAMPLE?2016-7/2017-7
2017(w)-2(c),2018(s)-7-c,2019(s)-1-c**

❖ TCP/IP

- **TCP/IP is the combination of 2 different types of protocol**
 - ✓ **TCP-Transmission control protocol**
 - ✓ **IP-Internet protocol**

- TCP/IP protocol is used to communicate across any set of interconnected network. Ex.-TCP-IP connect a set of network within a single building, with in physical campus or among a set of compose etc.
- TCP/IP provides end to end connectivity specifying how data should be address packetize address, transmitted, routers and receive at the destination.

TCP/IP model has 5 layers. These are:- 2017(w)-2(c)

- ✓ Application layer
- ✓ Transport layer
- ✓ Internet layer
- ✓ Network interface/ link sub network layer/ network access layer
- ✓ Physical layer

Application layer:-

- Application layer is the top most layer of TCP/IP model.
- Application layer is present on top of transport layer.
- Application layer include all the higher level protocol like DNS (Domain name system), HTTP, FTP, SNMP (Simple Network Management Protocol), SMTP (Simple Mail Transport Protocol) DHCP (Dynamic host Configuration Protocol).
- Application layer defines TCP/IP application protocol and how host program interface with transport layer service to use the network.

Transport layer:-

- Transport layer is the 3rd layer of the TCP/IP model.
- The purpose of transport layer is to permit device on the source and destination host to carry on a conversation.
- The position of the transport layer in between the application layer or internet layer. Ex. - TCP & UDP are used UDP –(User datagram protocol)
- The transport layer defines the level of service and status of the connection used when transporting data.

Internet layer:-

- It is the 2nd layer of the TCP/IP model.
- The position of the layer in between transport layer and network interface layer.
- Internet layer is also responsible for routing datagram layer.
- Internet layer job is to allow host to insert packet into any network and have them to deliver independently to the destination.
- At the destination side the data packet may appear in a different order than they were sending.
- It is the jobs of the higher layer to rearrange them in order to delivery them to proper n/w application operating at the application layer. Ex. IP, ICMP (Inter control message protocol) ARP (Address resolution protocol) RARP (Reverse address resolution protocol).

Network access layer:-

- It is the 1st layer of the TCP/IP model.
- It defines how data is physically sent through the network.
- How bits are electrically signal by hardware device the interface directly with a network medium such as co axial cable, optical fibber.
- The protocol use in this layer Ethernet frame relay.

**Q3-STATE AND EXPLAIN THE WORKING OF FTP PROCESS MODEL?2016-5,,2017(w)-6(b)
2019(s)-3-c**

- File transfer protocol

- This commonly used for exchanging file. It work on the principle of client server one is called server and the other is called client.
- Once connection has been established the client can do a no. of file manipulation such as uploading and downloading of files.
- The main objective of FTP- To promote computer program and data. To encourage indirect or implicate used of remote computer. To transfer data reliable or efficiently.
- **FTP COMPONENT**
 - ✓ FTP Command:- The commands that are used for FTP.
 - ✓ FTP Server:- This is used for upload or download of file.
 - ✓ FTP Site:- the collection of file and program on an FTP server.
 - ✓ Download:- To transfer a copy of file from a remote computer to a local computer.
 - ✓ FTP does not need a password through user

FTP server and authentication:- HT/IP also have the facilities of FTP server as handling the exchange of file.

FTP client

- FTP clients are program that enable the user to upload and download file.
- FTP clients also work a windows 95, 98, XP, UNIX, MAC, and LINUX.

Type of FTP Client:-

- 1) **Line mode FTP**
 - 2) **GUI FTP**
 - 3) **Browser base FTP**
 - 4) **Using line made FTP**
- 1) **Line Made FTP:-**Ex-are operating system are the windows, mac, linux are unix, these are capable of FTP client program.
 - 2) **GUI FTP:-**Some FTP client provide Graphical user interface and their completely stand alone.
Ex.-IP Switch, Inc etc.
 - 3) **Browser base FTP:-**Must web browser like Microsoft internet explorer net cape navigator and fire for include FTP client and they provide used they easy way to download and upload file.

Q4-DEFINE E-MAIL?EXPLAIN THE FORMAT OF EMAIL MESSAGE?2016-7,2017(w)-6(c)
2018(S)-1(c),2019(s)-5-c

Format of an e-mail message

- Internet email messages consist of two major sections:
 - ✓ *Header* – Structured into fields such as From, To, CC, Subject, Date, and other information about the email.
 - ✓ *Body* – The basic content, as unstructured text; sometimes containing a signature block at the end. This is exactly the same as the body of a regular letter.
- The header is separated from the body by a blank line.

Message header

- Each message has exactly one header, which is structured into fields. Each field has a name and a value.
- Email header fields can be multi-line, and each line should be at most 78 characters long and in no event more than 998 characters long.
- The message header must include at least the following fields:
 - ✓ *From*: The email address, and optionally the name of the author(s). In many email clients not changeable except through changing account settings.
 - ✓ *Date*: The local time and date when the message was written. Like the *From*: field, many email clients fill this in automatically when sending. The recipient's client may then display the time in the format and time zone local to him/her.
 - ✓ *Message-ID*: Also an automatically generated field; used to prevent multiple delivery and for reference in In-Reply-To: (see below).
 - ✓ *In-Reply-To*: Message-ID of the message that this is a reply to. Used to link related messages together. This field only applies for reply messages.
- Common header fields for email include:
 - ✓ *To*: The email address(es), and optionally name(s) of the message's recipient(s). Indicates primary recipients (multiple allowed), for secondary recipients see Cc: and Bcc: below.
 - ✓ *Subject*: A brief summary of the topic of the message.
 - ✓ *Bcc*: Blind carbon copy; addresses added to the SMTP delivery list but not (usually) listed in the message data, remaining invisible to other recipients.
 - ✓ *Cc*: Carbon copy; Many email clients will mark email in one's inbox differently depending on whether they are in the To: or Cc: list.
 - ✓ *Content-Type*: Information about how the message is to be displayed, usually a MIME type.

- ✓ **Precedence:** commonly with values "bulk", "junk", or "list"; used to indicate that automated "vacation" or "out of office" responses should not be returned for this mail, e.g. to prevent vacation notices from being sent to all other subscribers of a mailing list.
- ✓ **References:** Message-ID of the message that this is a reply to, and the message-id of the message the previous reply was a reply to, etc.
- ✓ **Reply-To:** Address that should be used to reply to the message.
- ✓ **Sender:** Address of the actual sender acting on behalf of the author listed in the From: field (secretary, list manager, etc.).
- ✓ **Archived-At:** A direct link to the archived form of an individual email message.

Q5-EXPLAIN DIFFERENT TYPES OF INTERNET CONNECTIVITY?(2019(S)-5(a))

Types of connectivity

There are 3 types of connectivity, i.e.

- ❖ Dial-up connection
- ❖ Leased connection
- ❖ VSAT connection
- ❖ Dial-up connection
 - It is also known as, level-2 connection. This provides connection to internet, through a dial up terminal connection.
 - The computer, which, provides, internet access is known as, 'host' and the computer that, receives, the access is 'client' or 'terminal'.
 - The client uses, modem to access a host and acts as, directly connected terminal to the host. This type of connection is also known as, remote modem access.
 - Host carries, all the command, that, are type or a client machine and the client computer acts as a 'dumb' terminal, connected to remote host.
 - It is also divided into two types, i.e.
 - I) Shell connection
 - II)TCP/IP Connection
 - Shell connection
 - In shell connection, it doesn't support, graphics display.
 - TCP/IP Connection
 - The measure difference between shell and TCP/IP account is that, shell account only display, text and doesn't support graphics, whereas, TCP/IP displays both. ⇒ It is more popular internet connection.

Components for dial-up connection

- Computer.
- Modem
- Telephone line

- Sheller TCP/IP connection
- Internet client software.
- ❖ Leased connection
 - It is also known as, direct internet access or level-3 connection.
 - It is secure, dedicated and most expensive with leased connection.
 - Computer is dedicatedly or directly connected to the internet using high speed transmission line.
 - Leased inter connection are limited to large corporation and universities, who, could effort these costs.
- ❖ VSAT connection
 - The full form of VAST is very small aperture terminal (VSAT).
 - It is a two way satellite ground station.
 - VSAT antenna with a dish antenna that, smaller than 3 meters.
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 - Data rates range from 4 kbit/s upto 4 mbit/s.
 - VSAT are used to transmit narrow band data.
 - Eg.- Transaction using credit cards.

Q6-WHY HTML IS USED?EXPLAIN FEATURE AND COMPONENT OF HTML WITH SUITABLE EXAMPLE?2015-8,2019(s)-6-c

- HTML stands for Hypertext Mark up language.
- HTML is the basic tool for designing the web page.
- It uses some standard tags to tell your web browser how to display the web page you have requested for this reason its called markup language.
- It uses tags as mark up codes in an HTML document. A tag is a symbol in HTML that has a special meaning.
- It is a documentation language to mark the heading, title, table and forms.

TAG ATTRIBUTES:-

- Tag attributes are the special words used inside the opening and closing tag to control the tags behavior.
- There could be more than one attributes for a tag separated by a space in between.

Ex: < BODY . BGCOLOR – “RED” TEXT = “GREEN”>
 ↓ ↓ ↓ ↓ ↓
 Tag name Attribute Attribute Value Attribute Attribute Value

- All the attribute value should be enclosed with double quote marks ("") except letter (A-Z, a-Z), Number (0-9), by then (-).

Base HTML TAGS:-

- HTML documents is made up of various tags but there are some basic HTML tags used in all HTML document to identify document parts.

- ✓ The HTML Tag
- ✓ The Head Tag
- ✓ The Title Tag
- ✓ The Body Tag

HTML TAG [<HTML> -----</HTML>]

- This tag surround the whole document which marks the start and end of the HTML document.
- It helps the browser to understand that this is the HTML document.

2. HEAD TAG [<HEAD>-----</HEAD>]

- Head tag is used to define the document header.
- It is placed between the HTML tag and contains the information like title, style documents description etc.

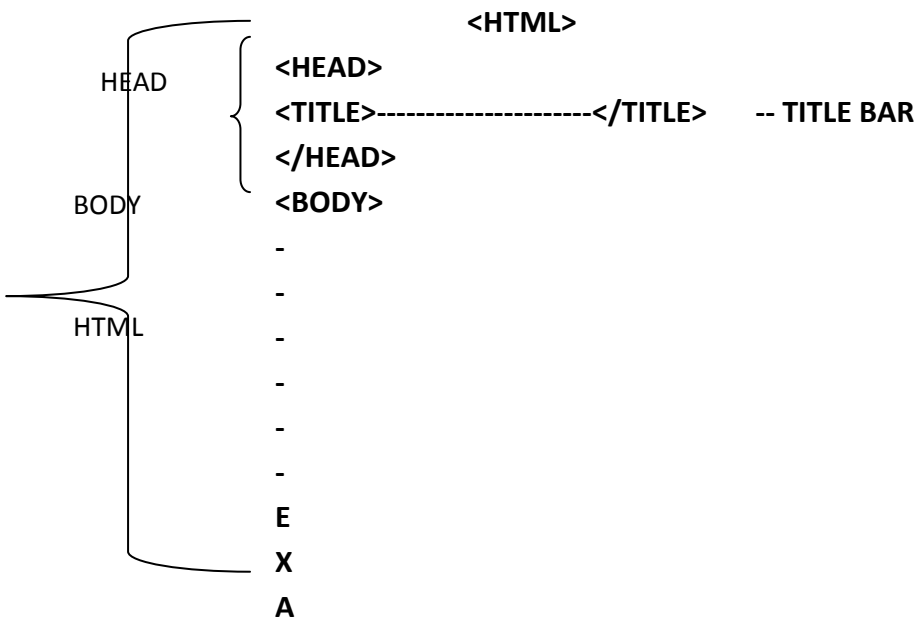
3. TITLE TAG [<TITLE>-----</TITLE>]

- Title tag appears within the head tags.
- The information enclosed by the title tag appears in the title bar.

4. BODY TAG [<BODY>-----</BODY>]

- Body tag appears after the head tag
- All the contents of the web page i.e. text, graphics, links etc. are enclosed in between the body tags.

STRUCTURE OF HTML DOCUMENT



MPLE-----

```

</BODY>
</HTML>
<html>
<head><title></title></head>
<body>
    
```

```
<table bg color = "Red" Boarder = "6" width = "50">  
</table>  
</body>  
</html>
```