CCA-102: Data communications

ASSIGNMENT

1. What are the different types of networks?
   - ✓ Local area network(LAN)
   - ✓ Wireless local area network(WLAN)
   - ✓ Wide area network(WAN)
   - ✓ Campus area network(CAN)
   - ✓ Personal area network(PAN)
   - ✓ Metropolitan area network(MAN)
   - ✓ Enterprise private network(EPN)
   - ✓ Virtual private network(VPN)

2. Explain the shielded twisted pair (STP) and unshielded twisted pair (UTP)?

SHIELDED TWISTED PAIR (STP)

- ✓ **Shielded twisted pair** is a special kind of copper telephone wiring used in some business installations.
- ✓ An outer covering or shield is added to the ordinary **twisted pair** telephone wires; the **shield** functions as a ground

UNSHIELDED TWISTED PAIR (UTP)

- ✓ **Unshielded twisted pair** is a pair of wires that are twisted around each other to minimize interference.
- ✓ Telephone and Ethernet cables are common examples of **UTP** wires.

3. What is difference between baseband and broadband transmission?

S. no	Baseband transmission	Broadband transmission
1	The type of signaling used is **digital.**	The type of signaling used is **analog.**
2	It is **bidirectional** in nature.	It is **unidirectional** in nature.
3	Signals can only over **short** distances.	Signals can be over **long** distances without being attenuated.
4	It works well with **bus topology.**	It is used with a bus as well as **tree topology.**
5	**Differential Manchester** encoding is used.	**Only PSK** encoding is used.

4. What is the difference between a hub, modem, router and a switch?

   HUB

   Hubs are dumb devices that pass on anything received on **one connection to all other connections.**

   MODEM

   Modem is a device that which helps to **connect home network to wider internet connection**.

   ROUTER

   Router is a device which helps us to **connect a device wired wireless**.

   SWITCH

   Switches are semi-intelligent devices that learn **which devices are on which connection.**

5. When you move the NIC cards from one PC to another PC, does the MAC address gets transferred as well?

   Yes, that's because **MAC addresses** are hard-wired into the **NIC** circuitry, not the **PC**. This also means that a **PC** can have a **different MAC address** when **NIC card** was replace by **another one.**

6. When troubleshooting computer network problems, what common hardware-related problems can occur?

   A large percentage of a network is made up of hardware. Problems in these areas can range from malfunctioning hard drives, broken NICs and even hardware startups. Incorrectly hardware configuration is also one of those culprits to look into.

7. In a network that contains two servers and twenty workstations, where is the best place to install an Anti-virus program?

   The **best** solution is to **install anti-virus** on all the computers in the **network.**

8. Define static IP and Dynamic IP? Discuss the difference between IPV4 and IPV6.

   Static IP

   When a device is assigned a static IP address, the address **does not change.**

   Dynamic IP

   A dynamic IP address is one that **changes from time to time** and isn't always the same.

   Difference between IPV4 and IPV6

   - IPV4 is 32-Bit IP address whereas IPV4 is a128-Bit IP address.
   - IPV4 is a numeric addressing method whereas IPV6 is an alphanumeric method.
   - IPV4 binary bits are separated by a dot (.) whereas IPV6 binary bits are separated by a colon (:).

9. Discuss TCP/IP model in detail.

The TCP/IP is a reference model. TCP/IP means Transmission Control Protocol and Internet Protocol.

It is the network model used in the current internet architecture well. These protocols describe the movement of data between the source and destination or the internet.

They also offer simple naming and addressing schemes.

It consists of five layers:

- The application layer.
- Transport layer.
- Network layer.
- Data link layer.
- Physical layer.

TCP/IP is a hierarchical protocol made up of interactive modules, and each of them provides specific functionality.

10. What is a Web Browser (Browser)? Give some example of browsers.

A web browser is a software application for accessing information on the World Wide Web. When a request a web page from a particular website, the web browser retrieves the necessary content from a web server and then displays the page on the user's device.

Examples

- Apple Safari.
- Google Chrome.
- Mozilla Firebox.
- UC Browser
- Opera Mobile.

11. What is a search engine? Give example.

A search engine is a **software system** that is designed to **carry out web searches**, which means to search the **World Wide Web** in a systematic way for particular information specified in a textual web search query.

Examples

- Bing.
- Start Page.
- Search Encrypt.
- CC Search.

12. What is the Internet & WWW? What are the uses of Internet in our daily life?

INTERNET

The **Internet** is a vast network that connects computers all over the world. Through the Internet, people can share information and communicate from anywhere with an Internet connection.

WWW

The WWW (World Wide Web) is a collection of web pages found on this network of computers. Web browser uses the internet to access the web.

Uses of INTERNET in our daily life

- Online Booking.
- Constructive Communication.
- In Effective Education.
- Online Banking.
- Job Searching.
- Social Networking.
- Online Shopping.
- Video Conference, etc.

13. What is an Internet Service Provider? Give some example of ISP in India.

An Internet service provider is an organization that provides services for accessing, using, or participating in the Internet.

Internet service providers can be organized in various forms, such as commercial, community-owned, non-profit, or otherwise privately owned.

Examples

- Reliance Jio.
- Airtel.
- Vodafone Idea.
- BSNL.

14. Discuss the difference between MAC address, PI address and Port address.

MAC address is used to ensure the physical address of computer. It uniquely **identifies** the **devices on a network.**

IP address is address of the system in the network. It is used to **uniquely identify** the connection of network with that **device take part in a network.**

Port is address of the service within the system. So IP address and Port defines address of the particular system. Port number is used to **identify** an **application/services** which you want to on your system.

15. How do we view my Internet browser's history?

    To view the web history in Chrome, click to open the menu: at the top-right of its window and select History, then click History a second time. Or press ctrl+ H on your keyboard.

    This shows the web history as a list of pages, organized by time and date, in the current tab.