CCA-102 : Data Communications

Q:1. What are the different types of networks ?

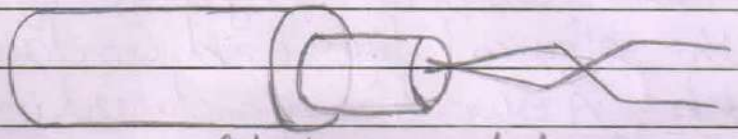
Ans:

Types of network

- PAN — personal Area network
- LAN — Local Area network
- MAN — Metropolitan Area network
- WAN — wide Area network

Q:2. Explain the Shielded twisted pair (STP) and unshielded twisted pair (UTP)

Ans: STP = STP is also the type of twisted pair which stands for Shielded twisted pair. In STP grounding Cable is required but in UTP grounding Cable is not required. in Shielded twisted pair (STP) much more maintenance is needed therefore it is Costlier than unshielded twisted ~~pair~~ pair (UTP.).



Shielded Twisted pair.

UTP = UTP is the type of twisted pair Cable. It stands for unshielded twisted pair. Both Data and voice are transmitted through UTP because its frequency range is Suitable. T

unshielded Twisted Pair

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Q:3. what is difference between baseband and broadband transmission?

Ans:

Baseband transmission	=	Broadband transmission
1. Digital Signaling		① Analog Signaling
2. Frequency division multiplexing is not possible		② The transmission of data is unidirectional.
3. Baseband is the bi-directional transmission		③ Signal traveling distance is long.
4. A short-distance Signal traveling		④ Frequency division multiplexing is possible.
5. The entire bandwidth is for Signal Single transmission		⑤ Simultaneous transmission of multiple ~~Sign~~ Signals over different Frequencies.

Q:4. what is the different between a hub, modem, router and a Switch?

① Hub = A Hub is a networking device. It helps to Connect Several devices to a Single network and also Connects Segments of Lan. Hub works at the physical layer and Contains many ports.

② Switch = A Switch is a networking device. It Connects multiple devices together on a Single network and routes the information. The Switch uses a data link layer to work on.

Modem = modems are hardware devices that allow a Computer or ano their device, such as a router or Switch, to Connect to the internet. They Convert or "modulate" an analog ~~sig~~ signal from a telephone or Cable wire to digital data

that a Computer Can recognize.
router = A Router is a networking device that operates under the network layer of the OSI model and is used to Connect two or more networks. It is a device that establishes a Common link between networks to enable data flow between them.

Q: 5 When you move the NIC Cards from one PC to another PC, does the MAC address gets transferred Can occur ? as well ?

Ans: 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 the NIC Card was replace by another one.

Q: 6 when troubleshooting Computer network problems, what Common hardware-related problems Can occur ?

Ans: The network Consists of hardware, problems Can vary from a defective network Card or hard drive malfunctioning, a bad starting materials or in Correct Configuration.
Most Common hardware related problems are pa BX, Lan Card, wlan Card and Wi-Fi AP if it is wireless, Cables, Switches, Routers and wireless Controllers.

Q: 7. In a network that Contains two Servers and

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twenty workstations, where is the best place to install an anti-virus program?

Ans: An anti-virus program must be installed on all servers and workstations to ensure protection.
That's because individual users can access any workstation and introduce a computer virus when plugging in their removable hard drives or flash drives.
In the most common configuration for software-based firewalls, the antivirus program resides on the same server as the firewall. The customer might purchase the firewall from one vendor and the scanning software from another.

Q: 8 Define Static IP and Dynamic IP? Discuss the difference between IPV4 and IPV6.

Ans: When a device is assigned a static IP address, the address does not change. most devices use dynamic IP addresses, which are assigned by the network when they connect and change over time.

⇒	IPV4	IPV6
1.	IPV4 has a 32-bit address length.	① IPV6 has a 128-bit address length.
2.	In IPV4 end to end. Connection integrity is unachievable	② In IPV6 end to end, Connection, integrity is achievable
3.	The Security feature is dependent on Application	③ IPSEC is an inbuilt Security feature in the IPV6 Protocol

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	IPV4	IPV6
4.	In IPV4 checksum filed Field is available	4. In IPV6 checksum field is not available not
5.	IPV4 Can be Converted to IPV6	5. not all IPV6 Can be Converted to IPV4

Q: 9 Discuss TCP/IP model in detail.

Ans:

TCP/IP

1. Application
- This layer standardizes
- Includes HTTP, FTP, SmTP and SNMP

2. Network
- This layer Connects ne
works So they Can trans
packets
- Includes IP and ICM

3. Transport
- This layer maintains and to-end network Communicat ion
- powered by TCP or UDP

4. Physical
- This layer Conne
nodes and hosts t
the network.
- Consists of pro
Cals that only o
ate on links

Q: 10 what is a web Browser? Give Some example of brow

Ans: A web browser is a Software application tha
is used to access the world wide web (www
or as known by everyone on the internet. I
is an interface between us and the informa

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available on the web.

Ex = Mozilla FireFox
opera Browser
Safari
Internet Explorer
Microsoft Edge
Chrome
Brave
Lynx

Q:11 what is a search engine? Give Example.?

Ans: Also known as a web search engine and an internet search engine, a search engine is a (usually web-based) computer program that collects and organizes content from all over the internet. The user enters a query composed of key words or phrases, and the search engine responds by providing a list of results that best match the user's query. The results can take the form of links to websites, images, videos, or other online data.

Ex= Google
Amazon
yahoo!
Bing
Ask
DuckDuckGo
Naver
Baidu

Q:12 what is the internet & WWW? what are the uses of internet in our ~~daily~~ daily life?

Ans: Internet: The internet is a globally connected

The internet is a global network of billions of computers and other electronic devices. With the internet, it's possible to access almost any information, communicate with anyone else in the world, and do ~~not~~ much more.
You can do all of this by connecting a computer to the internet, which is also called going online.
WWW The world wide web, commonly known as the web, is an information system enabling documents and other web resources to be accessed over the internet. The internet itself is a global, inter connected network of computing devices. The world wide web is a subset of these interactions and supports websites and URIs.

uses of Int- Education
Banking
Emails
E-Commerce
Job Search
Home
Recharges / Bill payments
Advertising & marketing
E-paper & News
Entertainment
File Transfer
E-ticketing.

Q:13 What is an internet Service provider? Give some Example of ISP In India?

Ans: The term "internet Service provider (ISP)" refers to a Company that provides access to the internet to both personal and business Customers. ISP's make it possible for their Customers to Surf the web, Shop online, Conduct business and Connect with family and friends - all for a Fee.

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Ex = Airtel — You Broadband India Limited
BSNL — ~~Idea~~
Atria Convergence technologies
Jio — Tata Sky Broadband
Hathway — MTNL
Tikona — Aircel
Idea Cellular

Q:14 Discuss the difference between MAC address, IP address and port address.

Ans (1) MAC address :- (1) MAC address stands for media Access Control Address.
(2) MAC Address is a Six byte hexadecimal address.
(3) NIC Card's Manufacturer provides the MAC Address.
(4) MAC Address operates in the data link layer.

(2) IP address :- (1) The term IP address in an acronym for internet protocol address.
(2) This address is either an Eight-byte or a Six-byte or
(3) The IP address, on the other hand, defines a Computer's logical address.
(4) The IP address primarily operates on the network layer.

(3) port address :-

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Q: 15 How do we view my internet browser's history?

Ans. If you want to view your search history to delete or manage certain websites, you can easily do so by navigating to your browser's History setting. The steps may very slightly depending on the platform you're using, such as windows and Mac or iPhone and Android. This wiki How will teach you how to view your Google Chrome, Mozilla Firefox, Microsoft edge and Safari history on both desktop and mobile platforms.