

CERTIFICATE IN COMPUTER
APPLICATION(CCA)

CCA -102 ASSIGNMENT

NAME :- MD MAHFOOZ ALAM
FATHER'S NAME :- MD MANZoor ALAM
ADDRESS :- ATTPO - CHAKBAHAUDDIN
D.O.B :- 16/12/1997
EMAIL ID :- Mdmm260071@gmail.com
CONTACT NO.: - 8252887988

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Md Mahfooz Alam
SIGNATURE :-

Q 1: What are the different types of network?

Ans → Types of Network :-

1. Personal Area Network (PAN) :-

The smallest and most basic type of network, a PAN is made up of a wireless modem, a computer or two, phones, printer tablets etc, and revolves around one person in one building.

2. Local Area Network (LAN) :-

We're confident that you've heard of these types of networks before - LAN are the most frequently discussed networks one of the most common one of the most original and one of the simplest types of networks.

3. Wireless Local Area Network (WLAN) :-

Functioning like a LAN, WLANs make use of wireless network technology such as Wi-Fi typically seen in the same types of applications as LANs these types of network don't require that devices rely on physical cables to connect to the network.

4. Campus Area Network (CAN) :-

Larger than LANs but smaller than metropolitan area networks (MANs) explained below, these types of networks are typically seen in universities large K-12 school districts or small business.

10. Enterprise private Network (EPN):-

These types of network are built and owned by business that want to securely connect its various locations to share computer resources.

11. virtual private Network (VPN):-

By extending a private network across the Internet, a VPN lets its users send and receive data as if their devices were connected to the private network - even if they're not through a virtual point-to-point connecting users can access a private network remotely.

Q 2 : Explain the shielded twisted pair (STP) and unshielded twisted pair (UTP):-

Ans → shielded twisted pair (STP):- STP cable has an foil additional braided mesh coating or metal foil that wraps each set of insulated conductors the electromagnetic noise. It also can eradicate a phenomenon called crosstalk which is the unwanted effect of one circuit (or channel) on another circuit (or channel). It occurs when one line (acting as a kind of receiving antenna) picks up some of the signals travelling down another line. This effect can be experienced during telephone conversation when one can hear other conversation in the background. Shielding each pair of a twisted pair cable can eliminate most crosstalk.

5 Metropolitan Area Network (MAN):-

These types of network are larger than LANs but smaller than WANs - and incorporate elements from both types of networks.

6. Wide Area Network (WAN):-

These types of networks slightly more complex than a LAN a WAN connects computers together across longer physical distances.

7. Storage Area Network (SAN):-

As a dedicated high speed network that connects shared pools of storage devices to several servers these types of network don't rely on a LAN or WAN.

8. System Area Network (also known as SAN):-

This term is fairly new within the past two decades. It is used to explain a relatively local network that is designed to provide high-speed connection in server-to-server applications.

9. passive optical local Area Network (POLAN):-

As an alternative to traditional switch based Ethernet LANs, POLAN technology can be integrated into structured cabling to overcome concerns about supporting traditional.

Q3. What is difference between baseband and broad band transmission?

Ans →	S.No.	Baseband	Broadband
	1.	In baseband transmission the type of signalling used is analog.	In broadband transmission the type of signalling used is digital.
(1)	2.	Baseband Transmission is unidirectional in nature	Broadband transmission is bidirectional in nature
	3.	Signals can be travelled over long distance without being attenuated	signals can only travel over short distances.
	4.	It is used with a bus as well as tree topology	It works with bus topology
(1)	5.	only PSK encoding is used	In broadband transmission Manchester and Differential Manchester encoding are used

Q4: What is the difference between a hub, modem, router and a switch?

Ans → Difference between a hub, modem, router and a switch:-

Hub:- Unlike switches, hubs broadcast data to all ports which is inefficient, so hubs are basically a multipoint repeaters.

Modem:- Stands for "modulating-demodulating"; modems are hardware devices that allow a computer or another device, such as a router or switch, to connect to the Internet. They convert or "modulate" an analog signal from a telephone or cable wire to digital data (1s and 0s) that a computer can recognize, simply send traffic from point A to point B without further manipulation.

Routers:- Are responsible for sending data from one network to another, work at Layer 3 (Network) of the OSI model, which deals with IP addresses. Typically routers today will perform the functionality of both a router and a switch.

Switches:- They use the MAC address of a device to send data only to the port the destination device is plugged into. Work at Layer 2 (Data Link) of the OSI model, which deals with MAC addresses.

Q5: When you move the NIC cards from one pc to another pc, does the MAC address gets transferred as well?

Ans → The Media Access Control address for any network adapter is hard coded into the card itself. Each manufacture of network adapters has a group of characters assigned that refer specifically to that company. I believe that is the 1st 1/2 of the MAC address which is 12 hexadecimal characters long but the network adapter just as your internal organs are part of you when you move to a new house, you take your liver with you. In the same way when you move a NIC to a different computer it takes its MAC address with it.

Q6: When troubleshooting computer network problems, what common hardware-related problems can occur?

Ans → The term troubleshooting refers to the process of identifying problems with a network through a rigorous and repeatable process and then solving those problems using testable methods. Troubleshooting is more effective than trying things at random until the network functions, and encourages you to document your process. Network troubleshooting is useful for almost anyone from a computer enthusiast to an aspiring network engineer.

x The common hardware-related problems can occur: - When you're beginning the troubleshooting process, check all your hardware to make sure it's connected properly turned on and working. If a card has come loose or somebody has switched off an important router, this could be the there's no point in going through the process of troubleshooting network issues if all you need to do is plug a card in. Make sure all switches are in the correct positions. -ta and

haven't been bumped accidentally. Next, turn the hardware off and back on again. This is the mainstay of IT troubleshooting, and while it might sound simplistic often it really does solve the problem. Power cycling your modem, router and PC can solve simple issues - just be sure to leave each device off for at least 60 seconds before you turn it back on.

Q7: In a network that contains two servers and twenty workstations where is the best place to install an anti-virus programs?

Ans → A good Firewall this can stop intrusions, malware, unauthorized access, etc. before they reach the workstation

Antivirus Software on the servers and at the end point workstation this software should be centrally managed to keep end users updated constantly and to minimize user meddling with the settings. Good antivirus will also protect email clients.

Educated and aware users who do not casually install downloaded programs, don't click on unknown links, don't fall for phishing emails etc. Establish a strong password policy for all users you should consider not giving your users administrative rights on their accounts. They will complain that they cannot will increase but I guarantee you work look your entire environment will be more reliable and secure.

Q8: Define Static IP and Dynamic IP? Discuss the difference between IPv4 and IPv6.

Ans → Static IP :- use advanced setting to reserve on IP address for a device on your local network your device keeps the same IP address until you cancel the reservation or remove the device from your network even if the device is disconnected.

When you sign up for Google Fiber for small business, you can choose to have no static IPs (that is dynamic IPs for all your devices) one static IP, or multiple static IPs. The number of static IPs available is shown on the screen when you sign up for service. If you sign up for static IPs we will assign addresses to you when your service is installed and activated.

Dynamic IP :- use advanced setting for your network to configure dynamic DNS. When your IP address changes, the DNS entry for your server is automatically updated with its new IP address so outside users can use the same domain name you

can choose the dynamic DNS provider and don't have to install additional software on your computer.

S.NO	IPV4	IPV6
1.	IPV4 has 32-bit address length.	IPV6 has 128-bit address length
2.	It supports manual and DHCP address configuration	It supports Auto and randomizing address configuration
3.	In IPV4 end to end connection integrity is unachievable	In IPV6 end to end connection integrity is Achievable.
4.	It can generate 4.29×10^9 address space	Address space of IPV6 is quite large it can produce 3.4×10^{38} address space
5.	Security feature is dependent on application	IPSEC is imbuilt security feature in the IPV6 protocol.
6.	Address representation of IPV4 is in decimal	Address representation of IPV6 is in hexadecimal

Q9: Discuss TCP/IP model in detail.

Ans → The TCP/IP model (Transmission control protocol/Internet protocol) is a model with four layers which is for both modelling current internet architecture as well as providing a set of rules that govern all forms of transmission over a network. DARPA, an agency of the United States Department of Defense, created it in the 1970s. It evolved from ARPANET which TCP/IP predecessor of the Internet the TCP/IP model or less often the DoD model.

This model was being made at the same time as the OSI model was created the TCP/IP model is not the same as the OSI model however it was influenced by the model which is why many names of the different layers are the same.

The TCP/IP model describes a set of general design guidelines and implementation of specific networking protocols to enable computers to communicate over a network. TCP/IP provides end-to

end connectivity specifying how data should be formatted addressed transmitted routed and received at the destination protocols exist for a variety of different types of communication services between computers

TCP/IP has four abstraction layers as defined in RFC 1122: link layer IP layer transport layer and application layer People often compare this layer architecture with the seven layer OSI Reference model using terms such as Internet reference model this is incorrect however because it is descriptive while the OSI Reference model was intended to be prescriptive hence being a reference model.

Q 10: What is a Web Browser? Give some example of browsers.

Ans → A Web browser or browser for short is a computer software application that enables a person to locate retrieve and display content such as web pages images video as well as other files on the world wide web

Browsers work because every web page image and video on the web has its own unique uniform Resource locator (URL) allowing the browser to identify the resource and retrieve it from the web server.

* Some example of Browsers: — 1. Google Chrome:— chrome created by internet giant google is the most popular browser in the USA perceived by its computer and Smartphone users as fast secure and reliable there are also many options for customization in the shape of useful extensions and apps that can be downloaded for free from the chrome store.

2. Apple Safari:— Safari is the default on Apple computer and phones as well as other Apple devices Its generally considered to be an efficient browser Its slick design being in keeping with the other of Apple.

3. Microsoft Internet Explorer and Edge:— Although it has been discontinued Internet Explorer is worthy of mention as it was the go-to browser in the early days of the internet revolution with usage share rising to 95% in 2003.

4. Mozilla Firefox:— unlike chrome, Safari Internet Explorer and Microsoft Edge Firefox is an open source browser created by community members of the Mozilla foundation It is perhaps the most customizable of the main browser with many add ons and extensions to choose from It late 2003 it had a usage share of 32.21% before gradually losing out to competition from Google Chrome.

engine for Mozilla Firefox since 2014 till now yahoo is the most search engine in the united states.

Q12: What is the Internet & WWW? What are the use of Internet in our daily life?

Ans → Internet: — The internet is a global network worldwide via of network connecting millions of users Worldwide via many computer network using a simple standard common addressing system and basic communications protocol called TCP/IP.

This allows message sent over the internet to be broken into small pieces called packets which travel over many different routes between source and destination computer.

Fortunately nobody owns the internet there is no centralized control and nobody can turn it off It's evolution depends on rough consensus about technical proposal, and on running code.

Engineering feed-back from real implementations is more important than any architectural principles.

WWW: — WWW stands for World Wide Web Technically the World Wide Web can be defined as All the resources and users on the Internet that are using the Hypertext Transfer protocol (HTTP) The World Wide Web or simply web is a way of accessing information over the medium of the Internet The World Wide Web is the universe of network accessible information.

⑤ Business promotion and Innovation :- The Internet is also used to sell products by using various e-commerce solutions. The result is new services and business starting every day thereby creating job opportunities and reducing unemployment.

⑥ Communication :- Without a doubt the Internet is the most powerful medium of communication at present. It connects people across different parts of the world free and fast.

⑦ Digital Transaction :- The Internet facilitates Internet banking and e-wallets. Since all digital transactions are stored in a database, it helps the government to track income tax details or income reports in the ITR.

⑧ Money Management :- The Internet can also be used to manage money. Now there are many that help us in daily transactions, transfer management, budget, etc.

⑨ Tour and Travel :- During tour and travel, the use of the Internet is highly effective as it serves as a guide. People browse the Internet before they start visiting a place. Tour bookings can also be done using the Internet.

* prominent use of Internet in our daily life :-

① use of the Internet in Education :- The Internet is a great platform for students to learn throughout their lifetime they can use the internet to learn new things and even acquire degrees through online education programs teachers can also use the internet to teach students around the world.

② Internet use to speed up daily tasks :- The internet is very much useful in our daily routine tasks. For example it helps us to see our notifications and emails. Apart from this people can use the internet for money transfer, shopping, order online food, etc.

③ use of the Internet for shopping :- With the help of internet anybody can order products online. The increase in online shopping has also resulted in companies offering a huge discount for their customers.

④ Internet for Research and Development :- The internet plays a pivotal role in research and development as it is propelled through internet research the benefit of the internet is enjoyed by small businesses to big universities.

Q.13: What is an Internet service provider? Give some example of ISP in India.

Ans → An Internet Service provider (ISP) is an organization that provides services for accessing using or participating in the Internet. Internet services typically provided by ISPs include Internet access Internet transit Domain name registration web hosting and user services.

Types of ISPs:—

- ① Dial-up services
- ② Broadband high-speed Internet
- ③ Digital Line Subscribers (DSL)

Some example of ISP in India:—

Jio, Airtel, Vodafone, Idea, cellular cellular, BSNL, Reliance communication Airtel Tata Teleservice Telemor India MTNL

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

Ans → * MAC address : —

The MAC address is used to identify your computer on the network and to talk to other computers on the local network including your router.

* IP address : —

The IP address is used to identify your computer on the larger Internet. This includes services like <http://www.quora.com> and others once off of the local network only the IP address is significant.

* port Address : — #

The port address is used to select a particular services to connect to such as HTTP, FTP mail etc port number are also used on your computer to identify specific process so you can have multiple windows open connected to different or the same server.

* Third Method :-

- ① open Firefox: It's a blue globe with an orange fox wrapped around it
- ② click \equiv This options is in the top-right corner of the Firefox window clicking it prompts a drop-down menu to appear
- ③ click Library This option is in the top-down menu
- ④ click History It's near the top of the menu
- ⑤ click Show all History This option is at the bottom of the History menu clicking it opens your Firefox history Double clicking a search term will open it in your Firefox browser.

Fourth method :-

- ① open Firefox It's the blue globe with an orange fox icon
- ② Tap \equiv This is in the bottom-right corner of the screen this is a pop-up window will appear
- ③ Tap History It's in the menu doing so appears your Firefox mobile history page.
- ④ Peruse your Firefox history tapping an item will open it in Firefox while swiping left over an item will remove it from your browsing history

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

Ans → We view my Internet browser's history :-

* First Method :-

① open Google Chrome. Its a red yellow green, and, blue, circular icon.

② click: This option is in the top-right corner of the window.

③ select History you'll see this option near the top of the drop-down menu selecting it will prompt a pop-out menu.

④ click History Its at the top of the pop-out menu doing so will take you to your search history

⑤ preview your browsing history you can scroll down through your browsing history or you can click a link to re-open its page.

* second method :-

① open Google Chrome Its a white app with the chrome icon on it.

② top: This icon is in the top-right corner of the screen

③ top History Its near the middle of the menu

④ preview your Its browsing history Tapping a history item will take you to its page.