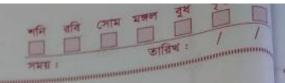
NAME: HOZZATUL SSLAM OVI ID: IT- 18023 Question:

- 1. a) What is data communication and computer network ? Explain. (3)
 - b) Write down the applications of communication and computer network (3)
 - c) why learning data communication and computer network is important? Explain with example . (5)
 - d) what is IPV4 addressing? what destination addren n 255.255. 255.255 bon? (3.)
- 2. a) Detine computer networ. (2)
 - b) Briefly explain the danitication of computer network (6)
 - c) Diverentiale between computer network types a with examples (7)



- 3. a) white down the ellectiveness in data communication 1. white down network enitenia-(3+3)
 - b) Adentity the components of data communication systems. (4)
 - a) what in distributed processing?

 why we use it? what are the advantages of distributed processing (2+2)
- 4. a) Detine enyptography. How it works ? (2+13)
 - b) Detrine sequi security threats. (244)
 - c) Detine network topology. Explain dedittenent network topology.

and peen to - peen network . (a)

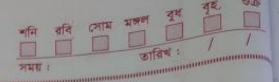
- 7. a) Detine dient-serven model. How two processes in dient-serven model can intenad 1. (2+13)
 - b) Draw the dient-server model ton two processes to interact. (4)
- c) what are application layer protocol? Explain them. (5)
- 8. a) what is TCP IP and how does it work 7. (2+3)
 - b) How network services help in our like 1. (4)
 - c) Ditterentiate between physical and logical address. (3)
 - d) Detine Autonomous system. How do autonomous systems work 1. How do you eneate an autonomous system 1. (2)

Am. to the Q. no 1

- a) Data communications retens to the transmission of this digital data between two on mone computers and a computer networn on data network in a telecommunications retwork that allows computers to exchange data.
- b) The application of communication and computer network in given below:

 O resource sharing such as printers and storage devices.

 O Exchange of information by
 - @ Exchange of intronmation by mean of e-mails and FTP.
 - 3 Internation sharing by using web on inderned.



- @ gp phones
- 3 video contenences.
- @ Panallel computing.
- C) The importance of learning data communication and computer network in given below.
 - 1. We Network Basic Undenstanding :
 A system of intenconnected computers and computerized peniphenals such as printers in a called computer as printers in a called computer networ.
 - 2. Network Engineening:

 Networking engineening in a complicate

 tank, which involve solut wane,

 trinmwane, chip leve engineening

 handwane, and electric pulses.

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3.9 Mennet:

d)

A network of networks in called an internetwork, or simply the internet. It is the largest network in existence of on this planet. The internet hugely connects all warrand it can have connection to

LANG and Home networks

The IPv4 address in a 32-bit number that uniquely identities a number interlace on a system, network interlace on a system, as explained in How IP addresse Apply to Network interlaces.

255. 255. 255. 255- Thin address in neveral 255. 255. 255. 255- Thin address in neveral her network broadcash, on messages that should go to all computers on that should go to all computers on the network 127.0.0.1- This is called the loopback address, meaning your computer's way of identifying itself.



Am. to the Q. no. 2

a) A system of interconnected computers and computerized penipherals such as printers in called computer network. This interconnection among computers tacilitates inframation sharing among them. Computers may comment to each to other by either wired on winder media.

b) classification of Computer Networks: Computer networks are classified based on various hactors. They includes:

a heographical span.

b. Inten-connectivity.

c. Administratio.

d. Anchitedune.

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O beognaphical span
be seen in one of the bollowing calegonies:

a. gt may be sparred across
your table, among Bludooth enable
devices, Ranging not more than low
meters

b. It may be spanned across a whole building, including intermadiate devices to connect all bloom.

2 gnten - connectivity:

@ Every single device can be connected to every other device on netwon, making a the network mest.

B All devices can be connected to a single medium but geographically dissonnected. বিষয়:

@ Administration:

From an administration's point of view, a network can be private network which belongs a single

accessed outside its physical or logical domain.

1) Network Anchitecture:

Computer networks can be discriminated into various types such as client-server, peen-to-pee on bhybrid, depending upon its anchitecture.

Pensonal Area Network:

A personal Anea Network (PAN) in smallest metwork which is very personal to a usen. This may

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include Bluetooth enabled devices on intra-ned enabled devices PAN has connectivity nange up to 10 meters.

Local Are Network:

A computer network spanned imide a buliding and opended under single administrative system in generally tenmed as Local area Networkpan Usually, LAN coverns an organization officy, schools, colleges on universities.

Metropolitan Area Network:

The Methopotitan Anea Network (MA)
generally expands throughout a city
such as cable ATV & network.

wide Anea Notwork:

An the name suggest, the wide Anea Network (WAN) covers a wide area which may span across provinces and even a whole contry.

Suternetwon:

A network of networks in called an internet work on simply the interne internet. Some of them are:

- @ Web situ.
- GE-mail.
- O sontant Managing.
- @ Blogging.
- @ Social Media
- @ Marketing,
- @ Notworking.

Am. to the Q. no. 3

a) Data communications are the exchange of data between two devices via gome from or transmission medium such as a wine cable. For data communication to occur, the communication devices must be to part of communication system made up of a combination of hardware (physical equipment) and soldware (programs).

4. Delivery: The system must be delivered data to the connect destiration.

- 2. Accuracy: The system must deliver the data paceunately.
- 3. Timelemen: The system must deliver data in a timely manner.

4. Jitlen: Jitlen netern to the variation in the packet annival time. It is the uneven delay in the in the uneven delay in the delivery of audio on vieleo packets a network must be able to meet a certain number of eniteria.

Openhormance: Pantenmance can be measured in many way, including transing time and presponse time.

Exediability: In addition to accuracy of delivery, network neliability in measured by the Inequency of Mailon.

3 Security: Network security investing dotate mon damage and development.

1. Manage: The message in the intermation (data) to be communicated.

2. Senden: The senden in the device that sends the data manage.

3. Receiven: The neeiven in the in the device that neceives the necessage.

4. Transmission medium: The Transmission medium in the physical nath by which a massage travels troom senden to neceven.

5. Protocol: A protocol in a set of rules that govern day communications.

() Distributed computing in cimple words can be defined as a group or computers that are wonking together at the backerd while appearing as one to the usen. In a distributed systed multiple computers can host dillenen soltware component, but all the computers work to accomplish a common good. Ontributed system multiple can also consist of differen configurate on a combination of contigunation such as personal computer, workstake and maintranes. The advantages of bintributed processing 1. Scalability and Modulan anough

2. bault Tolenance and Redundancy 3. Low Laterey a. Cost exectiveren 5. Eldiciency. Dis advantages of pistributed computing; 1. Complexity. 2. Higher initial cost. 3. Security concern, Am. to the a. no 6 An application layer in an abstraction layer that specities the shared communication protocols and interbace methods used by hostn in a communications network. In TCP/IP, the application layer contains the communications protocols and intentace methods used in procento-process communications across and internel protocol (IP) computer networks. b) The bollowing list shows examples

of application layer protocols.

standard Tep/IP services such as

the lite, thite and telnet commands.

simple network Management protocol

(SNMP), which enables network

management.

Application layer protocol:

1. TELNET!

Telent stands for the TELeconumications NETwork. It helps in terminal emulation. It allows talked client to access the resources of the Telnet server.

2-FTP;
FTP stands from tribe transfer
protocol. It is the protocol that
actually lets us transfer holes.

विषयः :

3. NFS:

It stands ben notwork tile system, It allows nemote hosts to mount tile systems over a network and interact with those tile cyclems as through they are mounted locally.

soft south of tone

It is loss reducible

4. TETP

5. SJITP

6. LPD

7. x wirdow

8- SNMP

9. DIVS

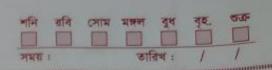
10. DHCP

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c) The difference & given below.

	The state of the s	Marsta to
THE PERSON NAMED IN	CLIENT-SERVER NETWORK	
- Commission	Focuses on internation	Focuses on connectivity
THE REAL PROPERTY.	Shaning	reads drive
TATALAN TANA	Len expensive to	9t in les expensive
1	Len expensive to implement	to implement.
C	lentralized genven in	Each peen has its
used to stone the		own data.
d	ata	994.
Client-serven Network		Peen - to - peen network
is more stable and scalable		are les slable it
		number of peen in
		incheased.
9 +	in len reliable	It in more rdiable

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Am. to the a. no. 8

a) TCP: As indicated in the name, there are two layers to TCP/IP. The top layer, TCP, in responsible ben taking large amount of data, compiling it into packeds and sending them on their way to be neceived by a tellow TCP layen. gp: The bottom layer, IP, in the locational aspect of the pain allowing the packets of intermation to be sent and neceived to the connect location. The tour abotraction layers are the link layer (lowest layer), the Internet layer, the tramport layer and the application layer.

transferring trites over the network

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b) The trollowing list shows examples of application layer protocols.

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3 Security: Network security investing datast mon damage and development.

· File shaning: One of the neason which gave birth to networking was birth to networking was bile shaning. File shaning enable its usem to shane their data with other usem.

· File Traster: This is an adjusty to eapy on move title traom one computer to another computer on to multiple computers.

Communication services

Email: Electronie mail in a communication method and something a communication method and something a computer user cannot work without, computer user cannot work without, social Networking: Recent technologies . Social Networking: Recent technologies have made technical like social.

Afternet chat: Internet chat provide

instant text transfer services between

two hash.

Application services

These are nothing but providing network based services to the users such as wed services, data base managing and nesounce shaning,

· Resource sharing: To use nesource elliciently and economically network provides a mean to share them.

. Database.

, web services

De Dinectory Services

- . Accounding ,
- and Authonization . Authentication
- · Domain Name services.

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সময়: তারিখ: / / between physical and C) The dillerence in given below: logical address Physical Adness Logical Adness physical address in a Logical address in the location that exists address that is genein the memory. nated by the central processing unit (CPU) in perspective of a program Physical address in The logical address in computed by memony generated by the central management unit (MIXU) processing unit (cpu) The logical address helps to obtain the The physical address helps to identify a , phyrical address location in the main memory Logic address in enased physical address in not when the system in alleded when the ne booted system is reboted.

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d) An autonomous system (AS) is a network on a collection of networks that are all managed and supervised by a single, entity on organization.

An automorous system in also sometimes netrenned to an a nouting domain. Networks with in an autonomous system communicate nouting intronmation to each other using an interior acteway protocol (IAP) How to make Autonomous cystem (As) connections.

1. You must identify the As to which each of the peening nortens belong.

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2. You must decide on a group ton the peening senion.

3. Imagine, for example, that you have multiple connections between your network and a neighbor network.

4. You must know the specific IP address of the intentace to which you are connecting.