



(b) A Sine wave has a frequency of 135 Hz. What is its period?

Marks 02
CLO 1

Page (1)

- Q1(a) 1 Ring topology has unidirectional movement of traffic.
- (2) Set of rules that govern communication is called Protocol.
- (3) Reliability of a network is the frequency of failure and network recovery time after a failure is measured.
- (4) ASK, PSK, FSK and QAM are all examples of Digital modulation.
- (5) Data synchronization is a function related with Physical layer.
- (6) ~~The information to be communicated~~
- (6) The Physical layer changes bits into electromagnetic signals.
- (7) ~~The information to be communicated~~ in a network is called the message.
- (8) Mesh topology requires the maximum number of I/O ports.

Iqbad

Page (2)

(9) A signal that repeats itself is a Periodic signal.

(10) A 56K modem can download at a rate of 56.6 Kbps and upload at a rate of 33.6 Kbps.

(11) In mesh topology, if there are five nodes then there will be 10 links.

(12) When data is transmitted from device A to device B using internet model, the header from A's layer 4 is read by B's Transport layer.

(13) A (ADC) Analog to digital ^{converter} device will convert an analog signal to a digital signal.

(14) Frequency Spectrum is the collection of all the component frequencies.

Q:2(a) 1 How are frames different from packets? Explain with example.

Ans:.

Frame :.

The term frame originated from networking specially communication over serial lines where sender "frames" the data which is a collection of bits by adding special characters before and after the transmitted data.

A frame can be defined as a data unit used in Data link layer. A frame is consist of markers which depicts the start and end of the packet and addresses for sending and receiving.

Example :.

A particular example of a frame is the Ethernet frame.

Packet :.

A packet can be any small block of data sent across a packet switched network. The term derives from character oriented protocols that are added special start-of-frame and end-of-frame characters

When transmitting packets. A packet is the protocol data unit used in the network layer. As the primary function of the Network layer is to deliver a packet from one logical address (IP address) to another. A packet is a solitary unit of data interchanged between two devices on a network. The router uses IP packet header to send packets through the network from source to destination.

Example:

an enormous file is broken into many packets and then transmitted across the network one at a time. The network hardware conveys the packets to the certain destination, where a software regathers them into a single file again.

Page (5)

Q.2(a) (2) A phone line being analog ...
can we send digital data
on phone lines? support your
answer with examples?

Ans: Computer transmit digital
data expressed as electrical
impulses. Where as phones
transmit voice frequencies
an analog signals. to
transmit digital data..
the sending modem must
first modulate or encode
a computers digital signal
into an analog signal that
can travel over the phone
line.

Example:-

Digital telephone sending
High-speed data over speed
phone lines new communication
systems are over digital.
analog is slowly on its
way out. therefore local
telephone companies may
offer some all of these
digital services you can
reconnected to your customers.

Name: .
Iqbal Hussain

I:d=13690

Page (6)

Q: 2(a)

3

Give some details about fault tolerance, which network topologies have fault tolerance capability?

Ans:.

Fault Tolerance:

is a quality of a computer system that gracefully handles the failure of component hardware or software. A system can be described as fault tolerant if it continues to operate satisfactorily in the presence of one or more system failure conditions.

Mesh Topology:-

A mesh topology has multiple connections making it the most fault tolerant topology available. Every component of the network is connected directly to every other component.

Page (7)

Q2(a) (4) How is logical addressing different from physical addressing support your answer with examples?

Ans:

Logical address:

it is address required for internetwork communication with different address format. it is also known as virtual address.

Physical address:

it is the address of a node in a network or we can call it link address is adequate for intranetwork having same address format.

Example:

if we travel across one state to another in Pakistan, our CNIC card is sufficient for our identity but if we cross the international border we need other identity proof like passport.

Q 2(a) (5) A local telephone company wants to connect the LANs in all its offices throughout a city. For this case which network category would be used?

Ans: We can connect the lans in all its offices throughout a city through WAN (wide area network) because WAN connects different smaller networks, including local area networks (LANs) and metro area network (MANs). This ensures that computers and users in one location can communicate with computers and users in other locations. WAN implementation can be done either with the help of the public transmission system or a private network.

Q:8 (a) Consider the following network. how many hops will it require for data to reach from node A to node J.

Ans:- They have 3 hops will required for data to reach from node A to J.

(1) From End-System A to router B intermediate system.

(2) From router B to router I.

(3) From router I to end system to router J.

(b) A sine wave has a frequency of 135 Hz. What is its period?

Solution:

Given data:

$$f = 135 \text{ Hz}$$

Required :-

$$T = ?$$

$$f = 135 \text{ Hz}$$

$$T = \frac{1}{f} \Rightarrow T = \frac{1}{135}$$

$$T = 0.0074 \text{ sec} \quad \text{Required Answer.}$$