

NAME : IATAZAZ AHMAD

ID : 15050

DEPARTMENT : Computer Science

SEMESTER : 4th

SECTION : A

SUBJECT : Computer Communication & Networks

Q No 1

(a).

Ans" The telecommunication, a Protocde data unit (PDU) is a single unit of information transmitted among Peer entities of a Computer network.

A PDU is composed of Protocol Specific Control information and user data. In the layered architecture of Communication Protocol stacks, each layer implements Protocol Specific types data exchange. For examples The transition control Protocol Top implement a connection oriented transfer mode of this Protocol is called a Segment, while the user diagram as Protocol data the internal layer the pro is called a Packet irrespective of its Payload type. The feature of Services of a network are implement in distinct layer e.g Physical layer organizing the Once of zero data

(b).

Advantages:-

- (a) The advantages of single layer study as all the functionalities is provided in this layer.
- (b) Higher bandwidth as number of layer is reduced.
- (c) It reflects the real-life separation of application from the TCP-downward section of the OSI model.

Disadvantages:-

- (a) The disadvantage make reasoning about the architecture of the network system less effective.
- (b) There will be security issue as the network security and application security will open at the single point may expose network open threat.
- (c) It makes troubleshooting hard. Multiple errors may reside at a single point.

QNO 2.

(a)

Ans: There are seven layers of OSI model

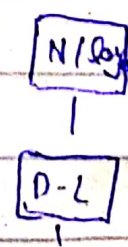
- (i) Physical layer
- (ii) Data link layer
- (iii) Network layer
- (iv) Transport layer
- (v) Session layer
- (vi) Presentation layer
- (vii) Application layer.

Physical layer. The Physical layer is the first layer OSI model.

The lowest layer OSI model to conveys the bit stream of electrical impulse. It is responsible for the actual physical connection b/w the device. The certain information of bits.

Data Link Layer The Data link second layer of OSI model.

The data has to transfer node to a node from sender to receiver. The main function data link is. The data transfer is error free



from node to node error free

from one node to another

Physical Layer

The packets received from Data

link layer further divided

Divided to frame depending on

frame size of NIC (N/w interface card)

⇒ when frame buffer is full, stop

the transmitting signal.

Network layer:

⇒ Controls the operation of subnet.

⇒ Routing packet from source to destination

It select shortest path to transmit

packet from no. of routers available.

⇒ IP header has to place in n/w

layer

Transport layer:

⇒ It decide if data transmission

should be parallel or single path.

⇒ Multiplexing, splitting on data are

by this layer

⇒ Provides additional quality of

service

⇒ Converting message of small unit

⇒ Responsible for end to end

delivery of complete message.

Session layer.

⇒ It manages & synchronizes the conversion b/w 2 different applications.

⇒ It is responsible of establishment of connection maintenance of session

Authentication also ensures security.

6 Presentation layer.

⇒ Translation layer

⇒ One form of code is converted into another form.

⇒ It ~~converts~~ converted with syntax and semantics of info.

⇒ It is the original form.

data compression, data encryption, data conversion^{etc}
Physical

Application layer.

⇒ It is top most layer

⇒ It transmits and distributes results to user

⇒ This is the all services provided

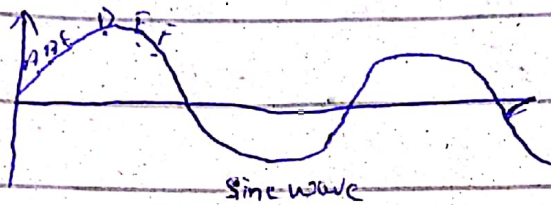
to application layer mail services

director service n/w resource etc

"Q No 2"

(b)

Ans Sine wave is a Simple Periodic Analog Signal. It cannot be decomposed into simpler signals.



The Phase is a specific location in a sine wave. It can be represented by these parameters: the peak amplitude, the frequency, and the phase. Since wave in a time phase plot is the constantly changing.

→ we can see that all the points are in different positions then we cannot explicitly plot the phase in time phase plot.

Q No 3

(a)

Ans: (1) The duration 8 bits is 10 Kbps
are (10 ms)

(2) The rate of the link is 4 Kbps

(3) The duration of each time slot 10/
rate of link $10/4$ ms.

(4) The duration of a frame = $1/\text{frame}$
rate = 1ms

Q No 3

(b)

Give data

$$N = 10,000$$

$$n = 1000$$

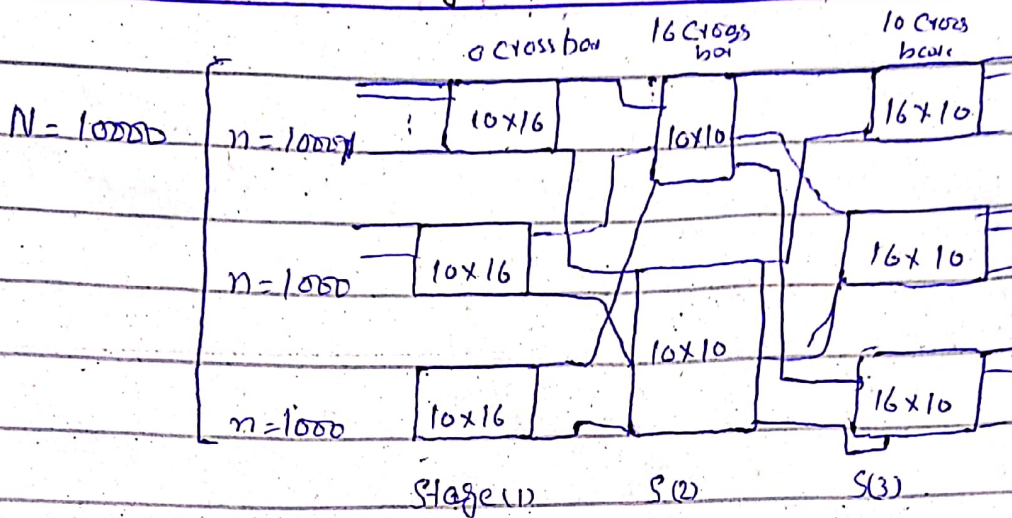
$$K = 16$$

First Stage $N/n = 10000/1000 = 10$

Cross boxes, each of size 10×16

Second Stage 4 Crossbox of size

10×10 Third Stage size 16×10



(b) Total number of Cross Points

$$= (10 \times 16) + 16(10 \times 10) + 10(16 \times 10)$$

$$= 1600 + 1600 + 1600 = 4800$$

(c) Only 16 Simultaneous Connection are each crossbars stage that mean

total number Connection $16 \times 10 = 160$

(d) If we use Crossbar (10000×1000)

all input in Connection at the same time means 1000 Simultaneous

Connection

(e) Blocking factor $160/10000 = 1.6\%$