



CT Assignment

Assignment Name: CT Assignment 02

Course code: ICT-4101

Course title: Telecommunication Engineering

Date of Submission: 08-12-2020

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4th year 1st semester

Session: 2016-2017

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MBSTU.

- 1.
- What is crossbar switching. Describe briefly 5
 - Write down the difference between GSM & CDMA network 5
 - What is telecommunication? Write down the Usage of telecommunication in ICT sector. 4
- 2.
- What is roaming? 4
 - Write down briefly about Synchronous transmission? 5
 - Write down briefly about Asynchronous transmission? 5
- 3.
- What is protocol testing? Which types of protocol tools used in testing 7 0
 - Write down about broadband? 4

c) What is buffering? 3

constant 120 OSI mob show (a)

4. a) Describe the characteristics of C/I 5
ratio? 3

b) Write down about MTU? 3

c) Write down briefly about precellular
systems. 6

transmitter receiver antenna (b)

5. a) Describe Multipath fading? 6

b) Describe multi access method? 6

c) What is the need of of epbc.
2

message mob show (a)

6. a) Describe different types of registrat-
ion. 6

b) What is Bridging? 2

c) Describe simple network management
protocol. 4

2

7.

- a) Write down ISO OSI features
and its drawbacks. 4
- b) Write down public switch trans
mission protocol. 2
- c) Band width of PSTN? 2
- d) PSTN Data Communication network 6

8.

- a) Describe transport layers briefly 4
- b) Types of Connection is telecom 4
- c) Write down crossbar Switch 4

3

(b) I Ans to the Q no. 1(a)

A crossbar switch is an assembly of individual switches between a set of inputs and set of outputs. The switches are arranged in a matrix. Collections of crossbar can be used to implement multiple layers and blocking switches. A crossbar switching system is also called a coordinate switching system.

A given crossbar is a single layer, non-blocking switch. Non blocking switch means that other concurrent connection do not prevent connecting other input to the other outputs.

(a) Ans to the Q no 1 (b)

Differences between GSM & CDMA are follows:

- | | |
|-------------------------------|------------------------------|
| 1. More reliable | Less reliable |
| 2. Code division | 2. Time & Frequency division |
| 3. More comfortable | 3. less comfortable |
| 4. Main maintenance cost less | 4. High Maintenance cost |
| 5. Reused factor | 5. No reused factor |
| 6. Less signal distortion | 6. Higher data rates |

Ans to the Q no 1 (c)

Telecommunications, also known as telecom, is the exchange of information over significant distances by electronic means, referring to all types of voice, data and video transmission. This is a broad term that includes a wide range of information transmitting technologies.

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Answer to the Q no 2 (a)

Ans 1) Roaming means that the user jumps between different mobile networks, when you are abroad where your own carrier doesn't have coverage to call, text or use mobile data. Roaming doesn't cost extra anymore.

Roaming refers to the ability for a cellular customer to automatically make and receive voice calls.

(b) I Ans to the q no 2 -(b)

Synchronous transmission:

- ⇒ Synchronous transmission does not use start & stop bit, hence data transfer rate is quicker
- ⇒ It uses clock signal that are built at each component.
- ⇒ Continual stream of data is sent between two nodes.
- ⇒ This method uses to check digit instead of parity bits.

(d)- S Ans to the Q no 2 (c)

Asynchronous Transmission:

1. It uses the stop & start bits.
2. It is used when data need to be sent data intermittently.
3. It recognize the second packet of the information by looking to the start & stop bits are supposed to be opposite polarity.
4. The start & stop bits are supposed to be opposite polarity.

(c) & Ans to the Q no 3(a)

Testing is the functionality of the node
to some standard message flow for
Compliance is known as protocol testing.

The list of the tools:

- ⇒ GLOMSIM Simulator (100 nodes)
- ⇒ Abacus 5000 (test SIP)
- ⇒ Etherpack (test IP)
- ⇒ NetHawk (SS7 testing)
- ⇒ Wireshark (IP & SS7)
- ⇒ K1257 (G20 teletronics)

(Q) Ans to the Q no 3 (b)

Show Broadband is an Internet access

without high speed data transmission.

Unlike dial up connection, broadband connection is permanently connected. It allows internet & telephone calls to

take place simultaneously.

Ans for the Q no 3(c)

Buffering is the process of preloading data into a reserved area of memory that's called a buffer. Buffering is the when the software downloads a certain amount of data before

it begins the video or music.

to see & sing Neethuhi sir

Answer to the Q no 4 (Q)

C/I ratio characteristics are as follows

M I

1. The carrier to interference ratio, C/I of the signal at the mobile from the transmitter in a given cell, can be found using an approximate manner by simulation of interference from all base stations using the same frequency.

Here, $\frac{C}{I}_{\text{UTM}} = \frac{R-n}{\sum_{i=1}^M D_i}$

2. If we assume all base stations are identically spaced & are at the centers of their cells we

$$\frac{C_0}{I} = \frac{\sqrt{3K}}{M}$$

Ans to the Q no 4-(b)

Q Maximum transmission unit refers to the largest packet size. MTU is for passing a communication protocol for a given layer. Communication interfaces such as IEEE, serial port, etc. are associated with MTU parameters.

Ans to the Q no 4(c)

Wireless transmission was originally shown as a method to remain in continuous contact with ships. In precellular system:

1. A group of frequency allocated to a large geographic zone.
2. When moving to a new zone, calls had to be reinitiated.
3. Due to poor filter technology the channel frequency was 120 kHz.
4. Half duplex system.
5. Most users not connected to PS.
6. Later progressed to GPRS.

Ans to the Q no 4(c)

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Q.11 on Q.5(a)

If one or more paths arrives somewhat later than the first group of paths, the gain over the transmission bandwidth will not be constant.

$$\text{For power} = \cos(2\pi 800t) + \cos(2\pi 800)$$

The coherence bandwidth is the bandwidth over which the channel response is somewhat flat.

$$B_c \cong \frac{1}{\text{waterfall width HWHP}}$$

Now from 2TMSI of corresponding notes.

Ans to the Q no 5(b)

Multi-access (MA) method in which radio resources are allocated into voice channels

FDMA: Frequency division, each voice

channel is assigned a separate frequency.

TDMA: Time division, each voice channel is assigned segments of time.

CDMA: Code division, each voice channel is assigned a specific code. At the receiver, the voice channels can be separated with minimal interference.

Ques. 5(c)

CPG message is sent by the switch towards Originator. When the switch receives the setup, the call is forwarded. After that the call is progressing. During the setup or active phase of call, a message is sent. This signifies the relayed to the originating has occurred.

(d) Ans to the Q no 6 (a)

Registration is the process of notifying the network that a phone is active on the system. When a phone is switched on, it registers by signalling to the MSC via the base station on a set up or control channel.

1. Periodic registration is when the phone announces itself to the network on a regular basis, typically every 2-3 hours.
2. Forced registration is when the phone monitors a control channel which provides information including the cell identification, location area code, and tracking area code.

Ans for the Q no 6(b)

Bridging is one of the forward techniques to the use in packet switched networks. Bridges makes no assumption about the address location of the network.

Ans for the Q no 6(c)

Simple network management protocol is one of the UDP-based network protocols. Its monitoring network attached devices for various administrative attentions. It has Application layer - database schema protocol & a group of data objects

Ans to the Q no 7(a)

ISO-OSI Features:

1. A three layer structure is used in this communication process
 2. The conversation between an upper & lower level is strictly business like
 3. Entities in the same level or level exchange information using their own private protocols
 4. A layer acts as a service provider as well as a user
 5. There are fairly well defined functions to be performed
 6. It is performed in each layer
 7. It is immaterial as to how functions to be performed in each layer.

(b)

Ans to the Q no 67(b)

Data transmission is "public switched telephone networks and electronic PABXs are designed to carry analog voice signals. Here data rates are usually limited. Maximum 64 kbps.

Ans to the Q no 67(c)

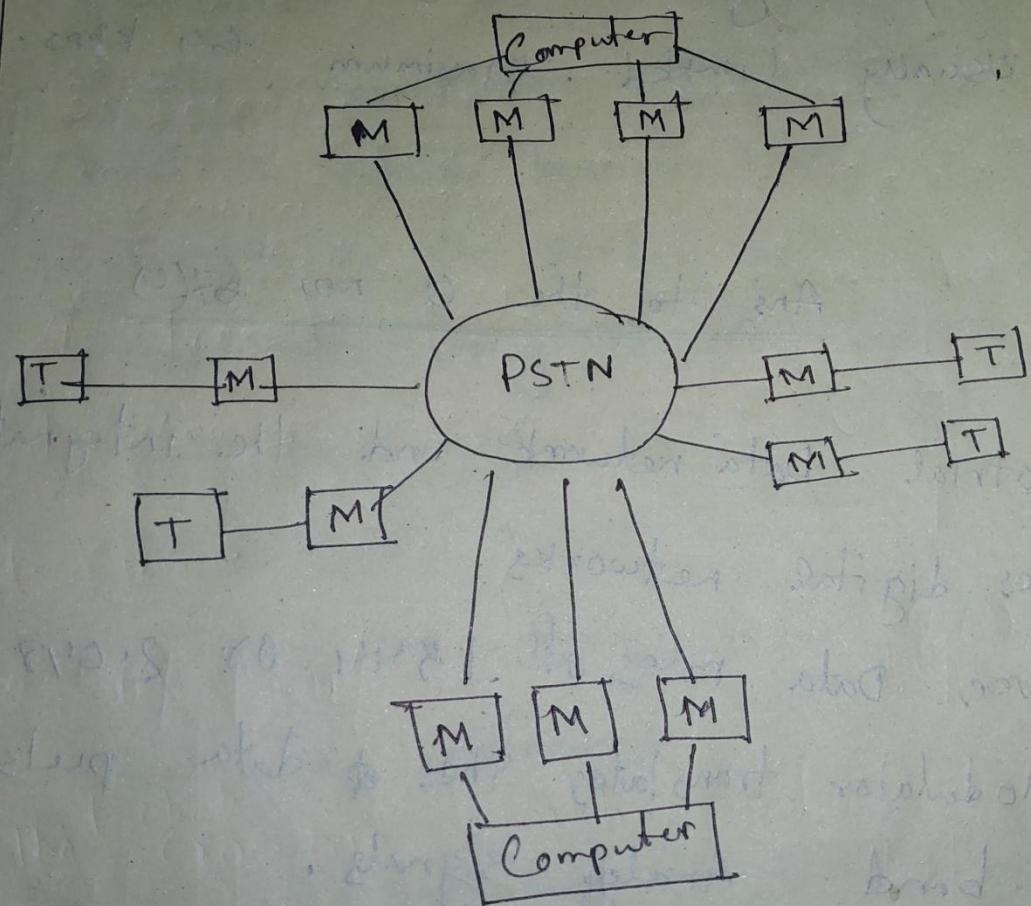
Terrestrial Data network and the integrated services digital networks.

However, Data rates of 1.544 or 2.048 mbps & Modulator translates the data pulse int voice band Analog signals.

At the transmitting end.

Ans to the Q no 7(d)

Data Communication Using PSTN:



M - modem

+ - Terminal

Ans to the Q no 8(a)

Transport layer: It is the first end to end layer in the OSI Architecture. It is responsible for matching User message characteristics and service requirements with that of the network capabilities. For a user it is a transport network that offers transport services regardless of the underlying networks.

Ans to the Q no 8(b)

(c) ans to set of era

There are 4 types of connection in telecommunication network. (a) normal set (b) a circuit switching with private set of short messages (c) store and forward

1. Local call connection between two subscribers in the system at the local trunks
2. Outgoing call connection between a subscriber and an outgoing trunk
3. Incoming call connection between an incoming trunk & a local subscriber
4. Transit call connection between an incoming trunk and outgoing trunk

(d) Relation b/w of Qno 8 (c)

Ans to the Qno 8 (c)

The crossbar switch features:

1. While processing a call, the common control system helps in the sharing of resources.

2. The specific rate functions of call processing are hardwired because of the wire logic. Computer's number of nodes not setting.
3. The flexible system design helps in the appropriate ration selection is allowed for a specific switch.
4. Fewer moving parts ease the maintenance of cross bar switching system.

