ANSWER KEY SUBMISSION

Date of Exam & Session	07-02-2023 & AN.	Category of Exam	CLA1/CLA2/CLA3/SURPRISE TEST
Course Name	COMPUTER COMMUNICATIONS	Course Code	18CSS202J.
Name of the Faculty submitting	Dr. M. SHUNMUGATHAMMAL	Date of submission of Answer Key	09-02-2023.
Department to which the Faculty belongs to	ECE	Total Marks	25

PART A (5×1 = 5 Marks)

1. A. Protocol

2. A. Simplex

3. C. MAN.

4. B. Message

5. A. Broadcast network.

PART B (2×4 = 8 marks)

6. Distinguish between circuit Switching & Packet Switching.

Circuit switching	Packet switching.
1. A single connection which also leads to a single path for establishing connection between 2 points.	1. A packet is simply data that has been divided into Smaller units along with header, for ease of transfer containing signal information.
2. A circuit needs to be established to make sure that data transmission takes place	2. Each packet containing the information that needs to be processed goes through dynamic route.

Signature of the Faculty

Circuit	Packet
3. A Uniform path is followed throughout the session.	There is no uniform path that is followed end to end through the session.
4. It is most ideal for voice communication, while also keeping the delay Uniform.	It is used mainly for data transmission as the delay is not Uniform.

7. List out data transmission modes and its working concept.

Simplex.
    Communication is unidirectional. Only one of the two devices on a link can transmit; the other can only receive.
        Ex: keyboard

Half duplex.
    * Each station can both transmit and receive but not at the same time.
    * When one device is ending, the other can only receive, and vice versa
        Ex: Walkie-talkies.

Full-duplex
    * Both stations can transmit and receive simultaneously.
        Ex. Telephone n/w.

8. Protocols / Standards.

* In telecommunications, a communication protocol is a system of rules that allows two or more entities of a communications system to transmit information via any kind of variation of a physical quantity.

* These are the rules or standard that defines the syntax, semantics and synchronization of communication and possible error recovery methods.

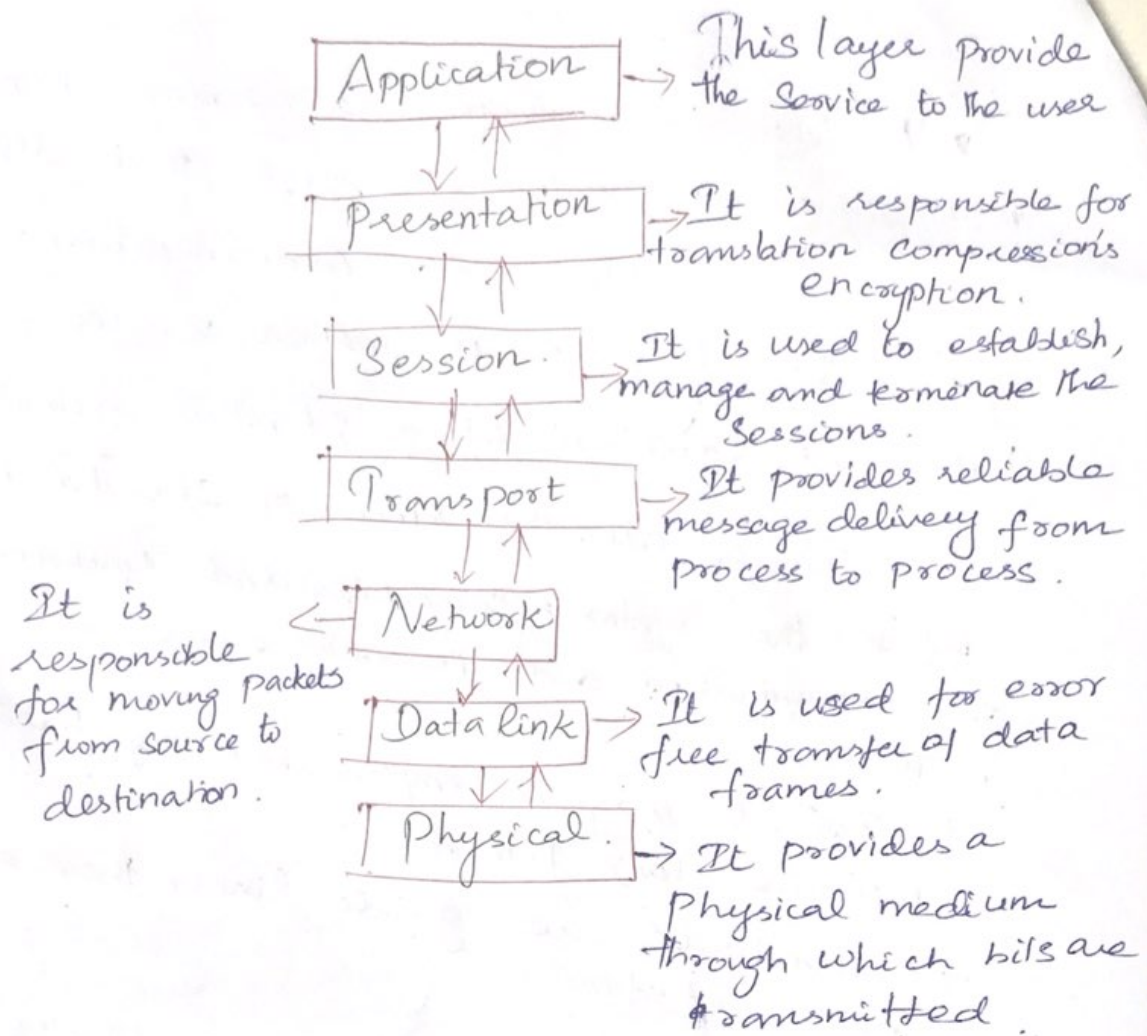* Protocols may be implemented by hardware, software (or) both.

* Standards are guide lines, there are more abstract.

Part C (1 × 12 = 12 marks)

9(a)

(8marks)

* OSI model is divided into two layers upper layer and lower layers.

* The upper layer mainly deals with the application related issues, and there are implemented only in the software.

* The lower layer is deals with the data transport issues.

```
┌─────────────┐      This layer provide
│ Application │ ───→ the Service to the user
└─────────────┘
      ↓ ↑
┌─────────────┐      It is responsible for
│Presentation │ ───→ translation compression's
└─────────────┘      encryption.
      ↓ ↑
┌─────────────┐      It is used to establish,
│  Session.   │ ───→ manage and terminate the
└─────────────┘      Sessions.
      ↓ ↑
┌─────────────┐   ─→ It provides reliable
│ Transport   │      message delivery from
└─────────────┘      process to process.
      ↓ ↑
┌─────────────┐
│  Network    │ ←──  It is
└─────────────┘      responsible
      ↓ ↑            for moving packets
┌─────────────┐      from source to
│  Data link  │ ───→ destination.
└─────────────┘
      ↓ ↑            It is used for error
┌─────────────┐      free transfer of data
│  Physical.  │      frames.
└─────────────┘
                ───→ It provides a
                     Physical medium
                     through which bits are
                     transmitted.
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9(b) Compare OSI and TCP/IP model. (4 marks)

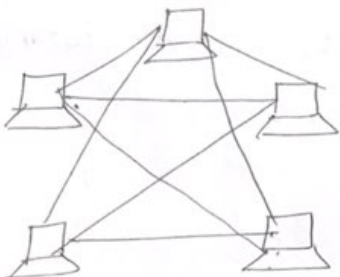| TCP/IP	OSI
1. Implementation model	1. Reference model.
2. Mode around which internet is developed. (practical model)	2. This is theoretical model.
3. 4 layers	3. 7 layers.
4. Support connection less.	4. Support both (Connection oriented & connection less)

Network Topology.   (8 marks)
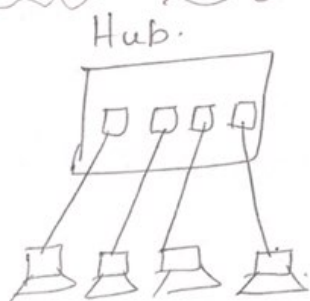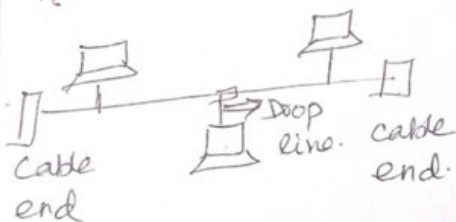
Topology

Mesh Star Bus Ring
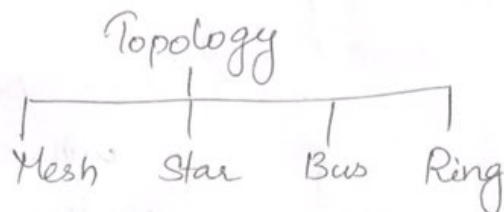
Mesh Topology.

1. Each device has a dedicated. Point to point link to every other device.
2. A mesh n/w with n nodes has n(n-1) links [n (n-1)/2 in case of duplex]
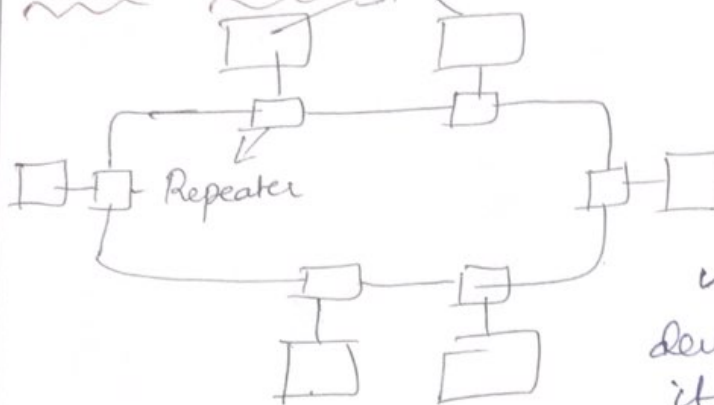
STAR TOPOLOGY

Hub.

1. Each device has a dedicated point to point link only to a central controller, usally called a hub.
2. The devices are not directly linked to each other.

BUS TOPOLOGY.

Cable end   Drop line. cable end.

1) Unlike mesh, ring, bus topology is multipoint.
2) One long cable act as a backbone to link all the devices in a n/w.
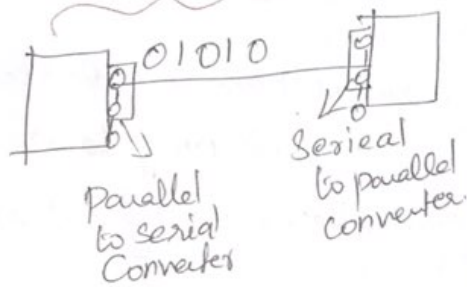
RING TOPOLOGY

Station.

Repeater

1. Each device has a dedicated point to point connection with only the two devices on either side of it.

2. A signal is passed along the ring on one direction, from device to device until it reaches its destination.

(4 marks)
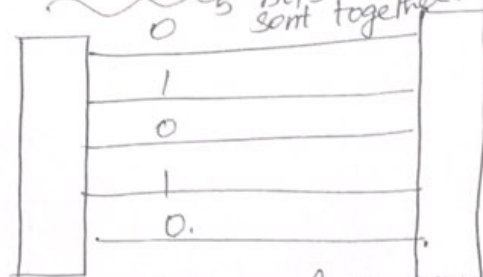
10(b)

Serieal Transmission

01010

Parallel to serial Converter

Serieal to parallel converter

* One communication channel

Types:
1. Asynchronous.
2. Synchonous.
3. Isochronous

Prepaued By
Dr. M. Shunmugathammal

Begair

Parallel Transmission:
5 bits are sent together.

0
1
0
1
0.

We need 5 wires.

* Use n wires to send n bits

Approned By
HOD /ECE
11/2/23