<Annexure II>
SRI KRISHNA COLLEGE OF TECHNOLOGY
An Autonomous Institution, (Approved by AICTE and affiliated to Anna University)
Kovaipudur, Coimbatore – 641042.

2021-2022 Odd Semester CIA Examinations

(To be filled by the Student)

Register Number	19TUCS038	Degree & Branch	B.E. Computer Science and Engineering
Name of the Student:	Felix Jordan M		
Subject Code & Name	19CS504 Computer Networks		
Date	10/8/21	Session: FN/AN	FN
Semester	5th	CIA I / II / III	CIA I
No of Pages Used:	9	In Words:	Nine

All the particulars given above by me are verified and found to be correct

I acknowledge that I have read the rules and regulations of online Examination and assure the following

1. Verified all the pages and the contents are handwritten by me including diagrams/equations if any.
2. Verified that all the pages are arranged in order as per page number and the required details are filled and signed by me in each page.
3. The content of the soft copy that I have uploaded for this subject is the scanned version of my answer script. Also I have verified that all the images in the soft copy are legible. I shall be solely responsible for any discrepancies found in future and will accept the decision taken by the committee later.

Felix

Signature of the Student

(For Office Use Only)

Part A - Q. No	1	2	3	4	5	6	7	8	9	SubTotal
Marks Scored										
Part B - Q. No	10	11	-	-	-	-	-	-	-	Sub Total
Marks Scored (i)			-	-	-	-	-	-	-	
Marks Scored (ii)			-	-	-	-	-	-	-	
Marks Scored (iii)			-	-	-	-	-	-	-	
Total in Words									Total	

Name of the Examiner: Signature of the Examiner with date:

Part - A

1.

2.   The suitable transport layer protocol will be Transmission Control Protocol (TCP). TCP is a transport protocol that is used on top of IP to ensure reliable transmission of packets

3.

TCP/IP	OSI
1.) TCP/IP has four layers	1.) OSI has 7 layers
2. It has horizontal approach	2. It has vertical approach
3. Protocols are not strictly defined	3. Protocols are strictly defined

4.

RTT (round trip time) is the time between packet send it's Ack is received. RTO (retransmission time out) is the time set for Ack of particular packet to be received.

timeout = estimated RTT + 4* Dev RTT.

5.
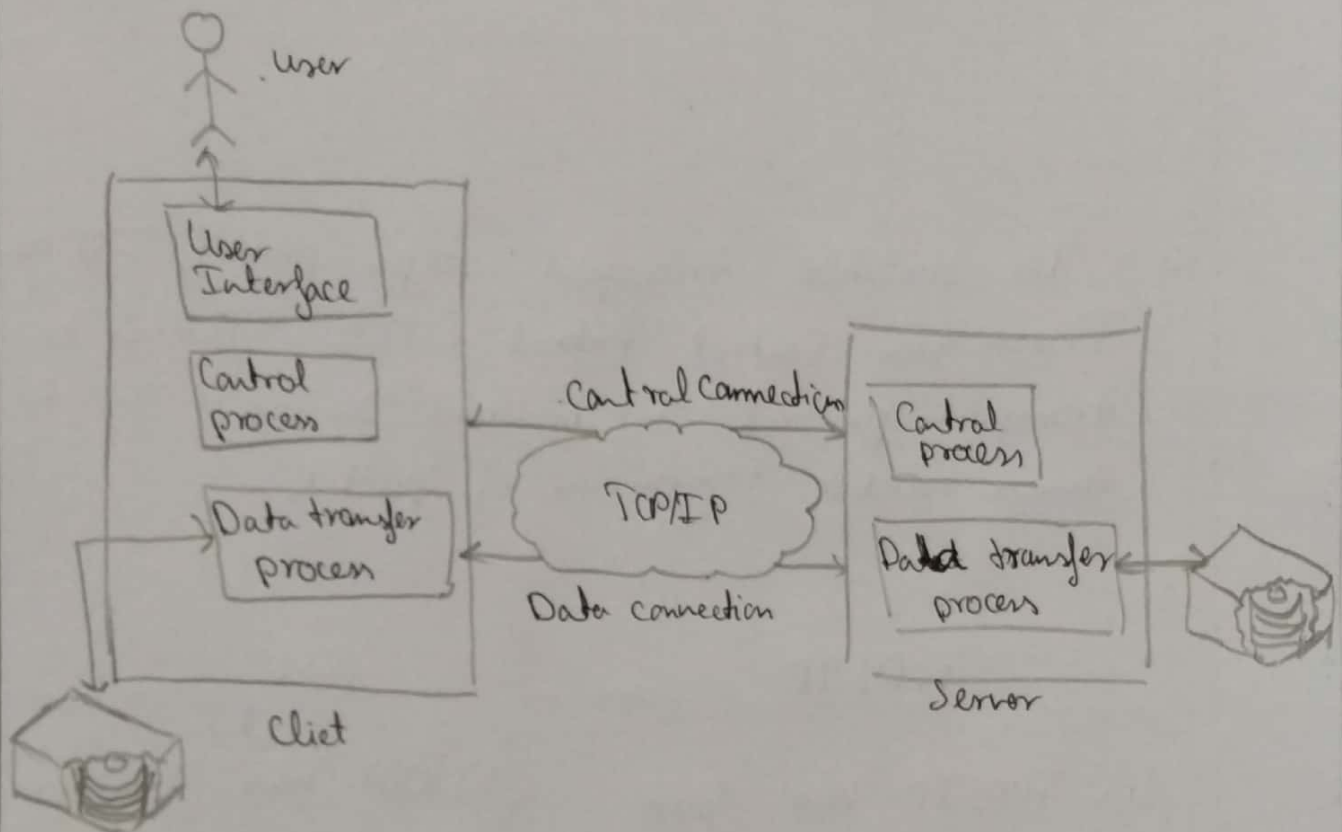
6. **Type = A**
- name is hostname
- value is IP address

type = NS
- name is domain
- value is hostname of authoritative name server

type = CNAME
- name is alias name for same real name
- value is canonical name

type = MX
- value is name of SMTP mail server associated with name

7. Mail Access Agent (MAA) protocols like POP3/IMAP are used for retrieving incoming mails from the local mail servers.

8.

Circuit Switching	Packet Switching
1. In Circuit switching, data is processed at source system only	1. In packet switching, data is processed at all intermediate node including source system.
2. Delay between data units in circuit switching is uniform	2. Delay between data units in packet switching is not uniform.

9. Three phases:-
  1. Circuit establishment
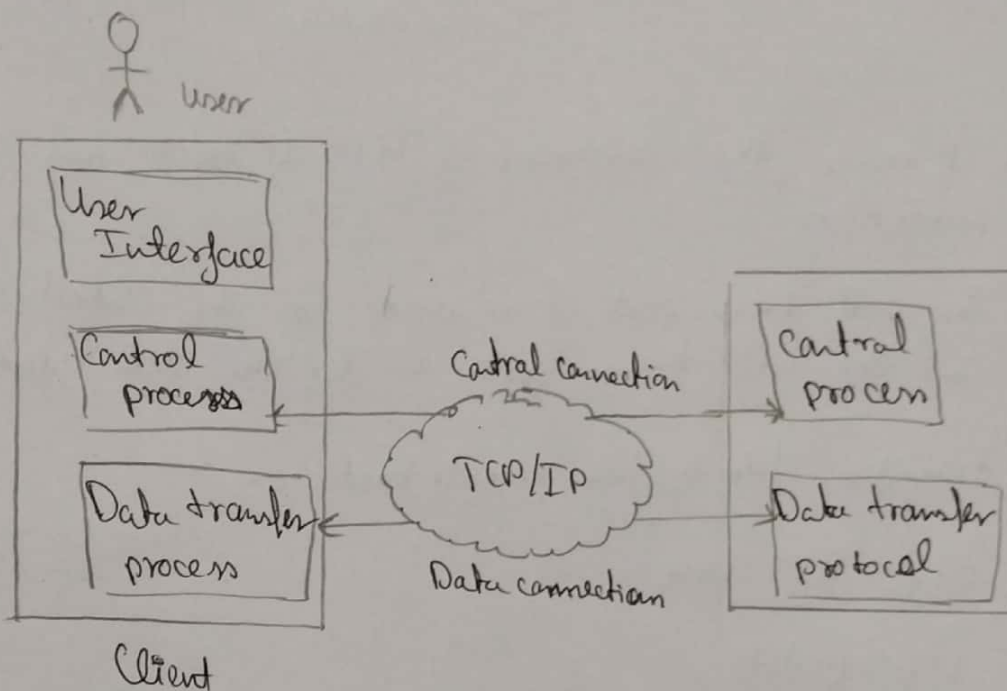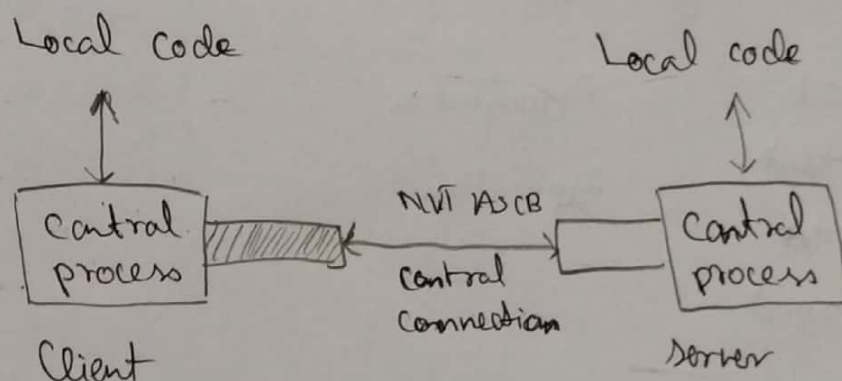 2. Data transfer
  3. Circuit disconnect

Part B

10
a) The suitable protocol to transfer files from local branch office to main branch office is File transfer protocol.

i) FTP

Client

ii) Using the control connection

Using the data Connection

Local data
Structure

File type, data structure
and transmission mode
are defined by the client

Data transfer
process

Data transfer
process

Data'
Connection

Server
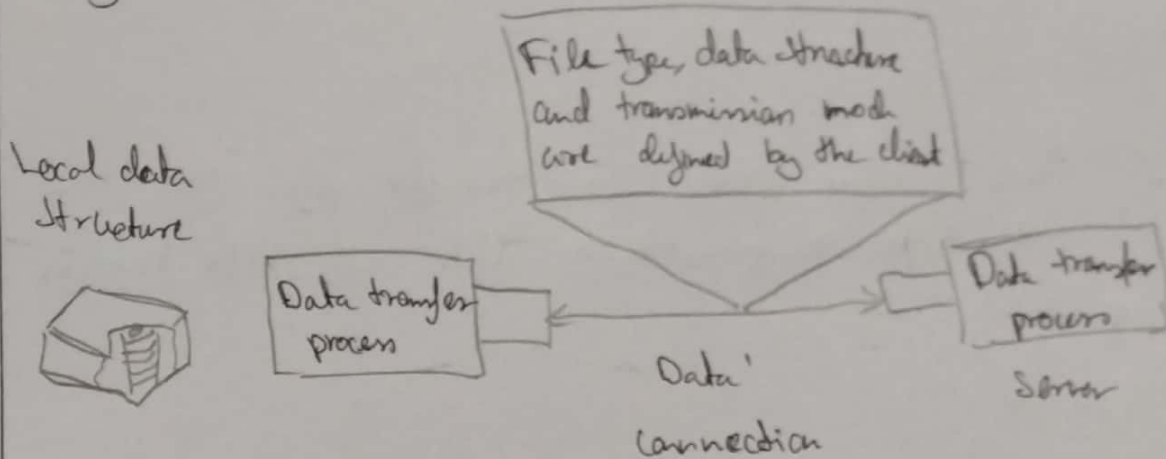
- FTP uses the services of TCP. It needs two TCP Connections

- The well-known port 21 is used for the control connection and the well-known port 20 for the data connection

- transfer file to/from remote host

- ftp: RFC 959

- ftp: port 21

10 b:

The OSI layers are:

- Physical   - Presentation

- Data link

- Network   - Application

- Transport

- Session

<Annexure I>

11(a)

SMTP is an application layer protocol. The client who wants to send the mail open a TCP connection to the SMTP server and the sends the mail across the connection SMTP Protocol.

There are 2 types:

1. End-to-end method

2. Store-and-forward method

The end to end model is used to communicate between different organizations whereas the store and forward method is used within organization. The SMTP server will keep the the mail to itself until it is successfully copied it to the receiver's SMTP.

Model of SMTP System:

In the the SMTP model user deals with the user agent. , for example, In order to exchange the mail using TCP, MTA used.
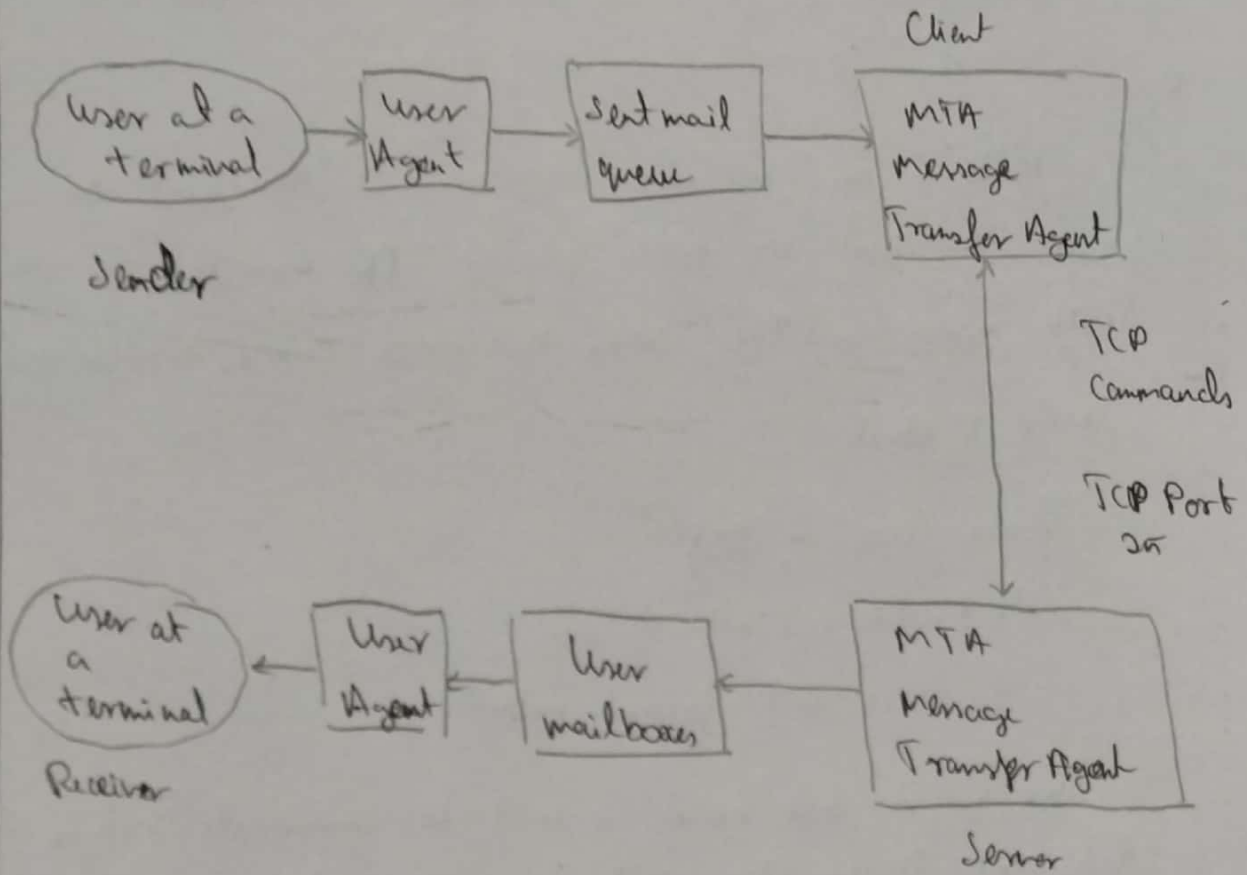
Client

```
┌──────────────┐      ┌─────────┐      ┌──────────┐      ┌──────────────────┐
│  User at a   │ ───▶ │  User   │ ───▶ │ Sent mail│ ───▶ │ MTA              │
│  terminal    │      │  Agent  │      │ queue    │      │ Message          │
└──────────────┘      └─────────┘      └──────────┘      │ Transfer Agent   │
                                                          └──────────────────┘
```

Sender

TCP
Commands

TCP Port
25

```
┌──────────────┐      ┌─────────┐      ┌──────────┐      ┌──────────────────┐
│  User at     │ ◀─── │  User   │ ◀─── │  User    │ ◀─── │ MTA              │
│  a           │      │  Agent  │      │ mailboxes│      │ Message          │
│  terminal    │      └─────────┘      └──────────┘      │ Transfer Agent   │
└──────────────┘                                          └──────────────────┘
```

Receiver

Server

11 b:

Switches are the connectivity points of a ethernet network. There are different types of switches in a network.

- **Unmanaged Switches:**

These are the switches that are mostly used in home networks and small businesses as they plug in and instatly start doing their job and such switches do not need to be watched or configured. These require only small cable connections

- **Managed Switches:**

These type of switches have many features like the highest levels of security, precision control and full management of the network. These are usually used in organisations containing a large network and a can be customized to enhance the functionality of a certain network.

There are 2 types:

o a) **Smart Switches:**

These switches offer basic management features with the ability to create some levels of security

but have a simpler management interface than the other managed switches.

b) Enterprise managed switches:

They have features like ability to fix, copy, transform, and display different network configurations, along with a web interface Snmp agent and command line interface.

— LAN Switches

These are also known as Ethernet switches or data switches and are used to reduce network congestion

— PoE Switches

POE switches are used to in PoE tech which stands for power power over Ethernet that is a technology that intergrates data and power on the same cable allowing power devices to receive data in parallel power

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