Name of the Subject: Distributed Computer Subject Code: IT-717

Seat No: IT076 Student ID: 18ITUBN116 Branch/Sem: IT-VII

Q3 (a)

Attempt the following:-

(1)

```
<xs: SimpleType name = "PlayerType">
    <xs: restriction base = "xs:token">
    <xs: enumeration value = "Batsman" />
    <xs: enumeration value = "Bowler" />
    <xs: enumeration value = "All-Rounder" />
</xs: restriction>
</xs: SimpleType>
```

(2)

```
<xs: ComplexType name = "PlayerlistType">
    <xs: Sequence>
        <xs: element name = "Name" type = "xs: String" />
        <xs: element name = "Age" type = "xs: Integer" />
        <xs: element name = "gender" type = "xs: String" />
        <xs: SimpleType>
            <xs: restriction base = "xs: String">
                <xs: pattern value = "male | female" />
            </xs: restriction>
        </xs: SimpleType>
    </xs: element>
    <xs: element name = "Team" type = "xs: String">
        <xs: SimpleType name = "Role">
        <xs: list itemType = "PlayerType" />
    </xs: SimpleType>
    </xs: Sequence>
</xs: ComplexType>
```

<xs: element name = "player" type = "playerlistType" />

Q3 b

Server.c.

```
#include <sys/type.h>
#include <sys/socket.h>
#include <stdio.h>
#include MAXLINESIZE 100
#define SERV_PORT 8000

int main ( int argc , char ** argv)
{
    int sockfd;
    Struct sockadd_in servaddr, cliaddr;
    int n;
    Socklen_t len;
    Char mesg [MAXLINESIZE];

    sockfd = socket (AF_INET, SOLK_DGRAM, 0);
    bzero (& servaddr, sizeof ( servaddr));
    servaddr. sin_family = AF_INET;
    servaddr . sin . s_addr = htonl(INADDR_ANY);
    servaddr. sin_port = ntons ( SERV_PORT);

    bind ( sockfd, (Struct sockaddr *) & servaddr,
            sizeof (servaddr));

    for (;;) {
        len = sizeof (cliaddr);
        n = recv from ( sockfd, mesg, MAXLINESIZE, 0,
                (Struct sockaddr *) & cliaddr, & len);
```

```
        Sendto (sockfd, msg, 0, n (struct, sockaddr *)
                        & cliaddr, len);
    }
}
```

Client.c

```
int main (int argc, char** argv)
{
    int sockfd, n;
    struct sockaddr_in servaddr;
    char sendline [MAXLINE], recvline [MAXLING];

    if (argc != 2){
        fprint (stderr, "Usage : %s IP-Address \n",
                                argv[0]);
        exit(-1);
    }

    sockfd = socket (AF_INET, SOCK_DGRAM, 0);

    Sendto (sockfd, sendline, strlen (sendline), 0,
            (struct, sockaddr*)& servaddr, sizeof
                    (servaddr));
    n = recvfrom (sockfd, recvline, MAXLINE, 0, NULL);

    fput (recvline, stdout);
}
}.
```

Name of the Subject: DC Subject Code: IT-717

Seat No: IT076 Student ID: 18ITUBN116 Branch/Sem: IT-7

Q2 (a) XML Schema.

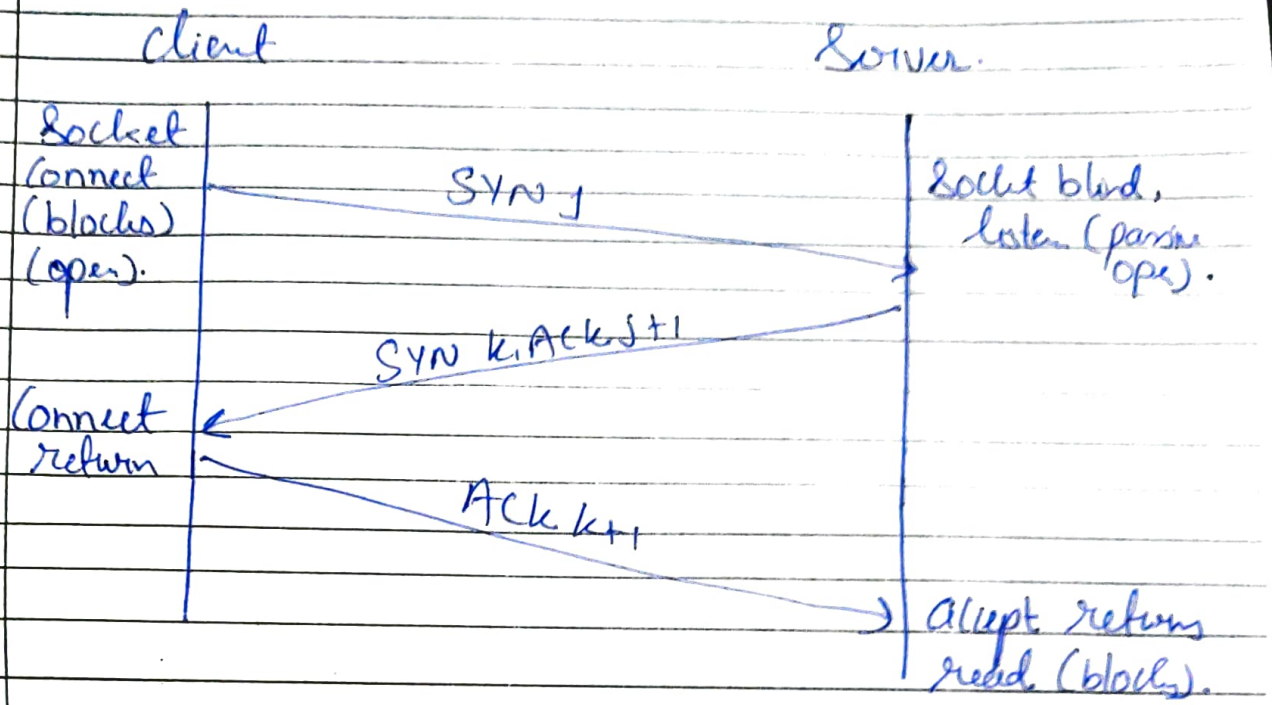
- XML document to serve as a purchase order to be sent to diffrent client.
- XML document sent has the same element names & hierachical structure.
- With standard element names & structure, a system could be created to handle all incomming XML automated.
- A Schema is allowed the acceptance of XML documents with a standardized elements name & hierachical structure
- XML document Schema is created using Schema Defination language.
- eg.,

```
<?xml version="1.0" encoding="UTF-8"?>
<xs: Schema xmlns:xs="_">.
  <xs: element name="Contact">
    <xs: ComplexType>
      <xs: Sequence>
        <xs: element name="name" type="xs:s
                                        String">.
        <xs: element name="phone"
                type="xs: int">
      </xs: Sequence>
    </xs: ComplexType>
</xs: Schema>.
```

Name of the Subject: DC Subject Code: IT-717

Seat No: IT076 Student ID: 18ITUBN116 Branch/Sem: IT-7

Q2 (C) TCP Connection.



- This is normally done by the calling socket, bind & listen function, & it is called a passive open.
- The client issues an active open by calling connect call.
- This will cause the client process to initialize Three way Handshake Sequence.
- In this client, TCP send a "Synchronize" (SYN) to the initialize sequence, TCP header & possible TCP option.
- The Server TCP must ACK the client.

Section – II Date: 04/08/2021 Signature of Student: Ryan Page No: 05