

Question 1.

SERVER CODE:

```
import socket

sock = socket.socket(socket.AF_INET, socket.SOCK_DGRAM)

server_address = ('localhost', 10000)

print('Starting up on {} port {}'.format(*server_address))

sock.bind(server_address)

while True:

    data, address = sock.recvfrom(4096)

    print('Received {} bytes from {}:{}'.format(len(data), *address))

    print(data.decode())

    message = input('Enter your message: ')

    sock.sendto(message.encode(), address)
```



CLIENT CODE:

```
import socket

sock = socket.socket(socket.AF_INET, socket.SOCK_DGRAM)
```

```
server_address = (input('Enter the server IP address: '),int(input('Enter the server port number: ')))
```

```
while True:
```

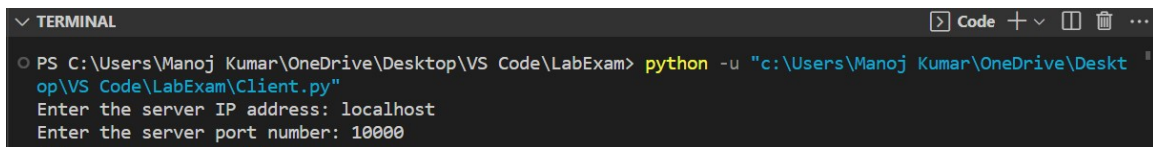
```
    message = input('Enter your message: ')
```

```
    sock.sendto(message.encode(), server_address)
```

```
    data, address = sock.recvfrom(4096)
```

```
    print('Received {} bytes from {}:{}'.format(len(data), *address))
```

```
    print(data.decode())
```

A screenshot of a terminal window titled 'TERMINAL'. The prompt is 'PS C:\Users\Manoj Kumar\OneDrive\Desktop\VS Code\LabExam>'. The user has entered 'python -u "c:\Users\Manoj Kumar\OneDrive\Desktop\VS Code\LabExam\Client.py"'. The script has prompted for 'Enter the server IP address:' and the user has entered 'localhost'. It has then prompted for 'Enter the server port number:' and the user has entered '10000'.

```
PS C:\Users\Manoj Kumar\OneDrive\Desktop\VS Code\LabExam> python -u "c:\Users\Manoj Kumar\OneDrive\Desktop\VS Code\LabExam\Client.py"
Enter the server IP address: localhost
Enter the server port number: 10000
```

The image shows two side-by-side Visual Studio Code windows. The left window is titled 'Server.py' and contains the following Python code:

```
1 import socket
2 sock = socket.socket(socket.AF_INET, socket.SOCK_DGRAM)
3
4 server_address = ('localhost', 10000)
5 print('Starting up on {} port {}'.format(*server_address))
6 sock.bind(server_address)
7
8 while True:
9     data, address = sock.recvfrom(4096)
10
11     print('Received {} bytes from {}:{}'.format(len(data),
12         *address))
```

The right window is titled 'Client.py' and contains the following Python code:

```
1 import socket
2 sock = socket.socket(socket.AF_INET, socket.SOCK_DGRAM)
3 server_address = (input('Enter the server IP address: '),
4     int(input('Enter the server port number: ')))
5
6 while True:
7     message = input('Enter your message: ')
8     sock.sendto(message.encode(), server_address)
9
10     data, address = sock.recvfrom(4096)
11     print('Received {} bytes from {}:{}'.format(len(data),
12         *address))
13     print(data.decode())
```

Below the code editors, the 'TERMINAL' tab is active in both windows. The left terminal shows the output of running the server script:

```
PS C:\Users\Manoj Kumar> python -u "c:\Users\Manoj Kumar\OneDrive\Desktop\VS Code\LabExam\Server.py"
Starting up on localhost port 10000
Received 2 bytes from 127.0.0.1:49665
hi
Enter your message: hello
```

The right terminal shows the output of running the client script:

```
PS C:\Users\Manoj Kumar\OneDrive\Desktop\VS Code\LabExam> python -u "c:\Users\Manoj Kumar\OneDrive\Desktop\VS Code\LabExam\Client.py"
Enter the server IP address: localhost
Enter the server port number: 10000
Enter your message: hi
Received 5 bytes from 127.0.0.1:10000
hello
Enter your message: 
```

The Windows taskbar at the bottom shows the system clock as 14:18 on 18-04-2023, along with various application icons and system status indicators.