### Question 1

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(a) Draw a network layout of bus topology to connect 5 client computers and 1 server computer.</td>
</tr>
<tr>
<td></td>
<td>(b) Mr. John wants to prevent unauthorized access to/from his company's local area network. Write the name of a system (software/hardware), which he should install to do the same.</td>
</tr>
<tr>
<td></td>
<td>(c) Which of the following are open source softwares: GNU, MS-Office, BOSS, Windows OS</td>
</tr>
<tr>
<td></td>
<td>(d) Name the government organization that contributes to the growth of FOSS in India.</td>
</tr>
</tbody>
</table>
|   | (e) Read the given activities carefully and mention whether the activity is snooping or eavesdropping:

  - i. Getting someone's login information by casually watching what he/she is typing.
  - ii. Setting up unauthorized parallel telephone lines
  - iii. Installing some software/hardware which captures the data while on its way.
  - iv. Reading the files on someone’s computer in an unauthorized manner. |

### Question 2

2. Answer the following questions:

   a) What are the main features Object Oriented Programming? Explain any two. [2]
   b) Differentiate between TextField and TextArea. [2]
   c) Define Class, Object & method. How they are interrelated? [2]
   d) Explain the following methods:
      (i) isEditable (ii) toolTipText( ) [2]
   e) Explain Operator & method Overloading with example. [2]

### Question 3

3. Answer the following questions:

   a) String Message=" Hello! How are you?", Msg1, Msg2;
      Msg1= Message.substring(7);
      Msg2= Message.substring(0,5); [2]
What will be the contents of the variables Msg1 and Msg2 after execution of the above statements?

b) Find the output of the following programme:

```java
int total=0;
for(int count=5; count<=10; count++)
{
    total +=count;
}
System.println(total);
```

c) Given the following code fragment:

```java
i = 10;
while (i> 0)
    System.out.println(i--);
System.out.println("Thank you");
```
Rewrite the above code using a for loop.

d) Rewrite the following code using while loop

```java
int sum = 0;
for (int i = 1 ; i<= 5 ; ++i) {
    sum = sum + c;
}
```

e) Find the output of the following code:

```java
String A= "Hello:, B="India", C;
int num1=10, num2=15, num;
C = A+B;
num = num1 + num2;
System.out.println(num);
System.out.println(C);
```

4. Answer the following question:

   a) Write a Java code to print the sum of digits of a given number.

   b) What will be the output of the following code:

```java
int a, b, c;
a= Math.round(0.7);
b =Math.round(-3.6);
c= a + b;
System.out.println(c);
```
Ms. Rakhi works in an International Bank as an IT Head. She designed a simple interest calculator program as shown below:

![Image of Interest Calculator](image)

The interest rate is given based on the account type as shown below:

<table>
<thead>
<tr>
<th>ACCOUNT TYPE</th>
<th>INTEREST RATE %</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAVING</td>
<td>4 %</td>
</tr>
<tr>
<td>RECURRING DEPOSIT</td>
<td>6 %</td>
</tr>
<tr>
<td>FIXED DEPOSIT</td>
<td>8 %</td>
</tr>
</tbody>
</table>

i. Write the code required for ‘INTEREST RATE’ button to display interest rate as per the above given criteria.
ii. Write the code required for ‘SI’ button to calculate and display ‘Simple Interest’ based on the given formulae:
   \[ SI = \frac{\text{amount} \times \text{interest_rate} \times \text{duration}}{100} \]
iii. Write the code required for ‘CLEAR ALL’ to clear all the textfields.

*****