<table>
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<th>Question</th>
<th>Answer</th>
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<td>1</td>
<td>(a) Draw a network layout of bus topology to connect 5 client computers and 1 server computer.</td>
<td><img src="image" alt="Diagram of bus topology" /> (½ mark for correct network topology and ½ mark for correct no of computers)</td>
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<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>
<td>Ans: He should install Firewall. (1 mark for correct answer)</td>
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<td>(c) Which of the following are open source softwares:</td>
<td>Ans: GNU, BOSS (½ mark for each correct answer)</td>
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<td>GNU, MS-Office, BOSS, Windows OS</td>
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<td>(d) Name the government organization that contributes to the growth of FOSS in India.</td>
<td>Ans: National Resource Centre for Free and Open Source Software (NRCFOSS) is the government organization that contributes to the growth of FOSS in India. (1 mark for correct answer)</td>
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(e) Read the given activities carefully and mention in front of the activity whether that 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.

Ans:
   i. Snooping.
   ii. Eavesdropping
   iii. Eavesdropping.
   iv. Snooping.
   (½ mark for each correct answer)

(d) Kristen has typed the following text in the address bar:

   http://www.cbse-international.com/help.htm

Explain to her the main concept of URL and Domain name with reference to the example given above.

Ans:
URL (Uniform Resource Locator) is the complete address of a document on the web, whereas a domain name specifies the location of document's web server. A domain name is a component of the URL used to access web sites.

   For example the web address http://www.cbse-international.com/help.htm is a URL. In this URL www.cbse-international.com is the domain name.

   (1 mark for differentiating between URL and domain name ½ mark for correctly identifying url and ½ mark for correctly identifying domain name)

(e) Chanakya has to write a paragraph in English on nobel laureates as a part of his holiday homework. He is using a software in which he types the text in Hindi and the software automatically converts the text into English. For example, if he types “नोबेल प्राइज इस गोवर्ड इन स्कवस फैटेगोरी” the software converts it into “Nobel Prize is given in six categories”. What kind of text entry is it - phonetic text entry OR keymap based text entry? How is it different from the other kind of text entry?

Ans:
It is phonetic text entry.
It is different from keymap based text entry as in the keymap based text entry keyboard keys are mapped to specific characters using a keymap whereas in phonetic text entry text translation is done by some software based on probable pronunciation of the entered text.
(1 mark for specifying “phonetic text entry”)
(1 mark for specifying correct difference)
2. a) FEATURES OF Object Oriented Programming:

i. Object
ii. Class
iii. Data Hiding and Encapsulation
iv. Dynamic Binding
v. Message Passing
vi. Inheritance
vii. Polymorphism

DATA ABSTRACTION AND ENCAPSULATION:
Combining data and functions into a single unit called class and the process is known as Encapsulation. Data encapsulation is an important feature of a class. Class contains both data and functions. Data is not accessible from the outside world and only those functions which are present in the class can access the data. The insulation of the data from direct access by the program is called data hiding or information hiding. Hiding the complexity of program is called Abstraction and only essential features are represented. In short we can say that internal working is hidden.

INHERITANCE:
It is the process by which object of one class acquire the properties or features of objects of another class. The concept of inheritance provides the idea of reusability means we can add additional features to an existing class without modifying it. This is possible by deriving a new class from the existing one. The new class will have the combined features of both the classes.

Example: Robine is a part of the class flying bird which is again a part of the class bird.

b) Differences between TextField and TextArea
1. TextField displays only one line of text of any length. TextArea displays multiple lines of text of any length.
2. TextField generates ActionEvent handled by ActionListener and TextArea generates TextEvent handled by TextListener.

c) CLASS: Class is a collection of objects of similar type. Objects are variables of the type class. Once a class has been defined, we can create any number of objects belonging to that class. Eg: grapes, bananas, and orange are the member of class fruit.

Example:
Fruit orange;
In the above statement object mango is created which belong to the class fruit.

NOTE: Classes are user-defined data types.

OBJECT: Object is a collection of number of entities. Objects take up space in the memory. Objects are instances of classes. When a program is executed, the objects interact by sending messages to one another. Each object contain data and code to manipulate the data. Objects can interact without having know details of each others data or code.

METHOD: A Java method is a collection of statements that are grouped together to perform an operation. When we call the System.out.println() method, for example, the system actually executes several statements in order to display a message on the console.
2. d)

(i) isEditable – it is used to set the editable property of the textfields.

(ii) toolTipText( ) – It is used to give the message of functioning of swing controls.

e) Explain Operator & method Overloading with example.

**Operator Overloading:**

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

3. Answer the following questions:

a) String Message=" Hello! How are you?", Msg1, Msg2;

Msg1= Message.substring(7);
Msg2= Message.substring(0,5);
What will be the contents of the variables Msg1 and Msg2 after execution of the above statements?

Msg1 = Hello!
Msg2 = Hell

b) Find the output of the following programme:

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

Ans: Total = 45

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.

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

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

Ans:
```java
int sum=0;
while(i<=5)
{
    sum = sum + c;
    ++i ;
}
```

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);
```

Num = 25
C = Hello India

4. Answer the following question:

a) Write a Java code to print the sum of digits of a given number.
```java
{
int temp, num, result=0;

temp = num;

while(temp > 0){
    result = result + temp;
    temp--;
}
}
```

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);
```

a = 1  b = -4  c = -3
c)

/* Code for Calculate the Simple Interest */

int p, r, t, si;

si = (p*r*t) / 100;

/* Code for Clear button */

jTextField1.setText(" ");

jTextField2.setText(" ");

jTextField3.setText(" ");

jTextField4.setText(" ");