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B.Tech. Second Assessment Examinations –September 2017

Third Semester

Computer Science and Engineering

15CSE202 OBJECT ORIENTED PROGRAMMING

Time : Two hours

Maximum : 50 Marks

Answer all questions

1. a) Differentiate between method Overloading and Overriding in Java. (2 Marks)
- b) Interfaces cannot have variables. Comment on the statement. (2 Marks)
- c) 'private' member of a class can be accessed by a sub-class belonging to same package. (1 Mark)
Whether the statement is True or False. Justify your answer

2. There is an interface called BankInterest with a method rateOfInterest() that returns a float value corresponding to the interest rate on fixed deposits offered by a bank. SBI offers 9.15% interest whereas PNB offers 9.7% interest. For Dhanlaxmi Bank, it is 9.5%. Assume that each bank has a class named after its name (i.e.; class corresponding to SBI is named SBI) and each class implements the above interface. Write the complete Java program that has the interface definition, three classes corresponding to three banks listed and a driver class that contains main() method. (5 Marks)

3. Find any error in the following Java Program. If there is an error, correct the program and give the output in such a way that all messages from Print () functions are printed according to the class hierarchy given [from top to bottom], as your output. (5 Marks)

```
class Grandparent {  
    public void Print() {  
        System.out.println("Grandparent's Print()"); //message  
    }  
}
```

```
class Parent extends Grandparent {  
    public void Print() {  
        System.out.println("Parent's Print()"); //message  
    }  
}
```

```
class Child extends Parent {  
    public void Print() {  
        super.super.Print();  
        System.out.println("Child's Print()"); //message  
    }  
}
```

```

Public class testper1 {
publicstaticvoid main(String[] args) {
    Child c = new Child();
c.Print();
}}

```

4. a) Predict the output of the following program: (3 Marks)

```

import java.io.*;
public class test {
    public static void main(String[] args) {
        String obj ="abc";
        byte b[] = obj.getBytes();
        ByteArrayInputStream  obj1 = new ByteArrayInputStream(b);
        ByteArrayOutputStream obj2= new ByteArrayOutputStream();
        for (inti = 0; i< 2; i++) {
            int c;
            while ((c = obj1.read()) != -1) {
                if (i == 0 ) {
                    char g=Character.toUpperCase((char)c);
                    System.out.println(g); }
            } } } }

```

- b) Write a java program to read and write an integer **100** and a string “JAVA STREAMS are not Boring” using the streams: BufferedReader and InputStreamReader. (2 Marks)

5. What is the significance of Serialization and deserialization in java? What are the high-level streams available in java that contain the methods for serialization and deserialization of an object? Write a java program to write an object into a file which contains details of students who won the House Election 2017 for sports and cultural in your respective class. (10 Marks)

6. Consider a Banking System, where the customer and Employee interacts with the system through various activities like Opening an Account(done in an Offline mode), Depositing, and Withdrawing Funds(in both cases balance has to be updated). A additional bonus is calculated for the case of amount greater than 10,000 or age over 55. Allow an NRFC(Non-Resident Foreign Currency) customer also to access this system. Draw an Use case Diagram to represent the above scenario. (5 Marks)

7. Draw an activity diagram for an **order management system** with the following activities:

- 1.Send order by the customer
- 2.Receipt of the order
- 3.Confirm the order
4. Dispatch the order

After receiving the order request, condition checks are performed to check if it is normal or special order. After the type of order is identified, dispatch activity is performed and that is marked as the termination of the process. (5 Marks)

8. Predict the output of the following Program.

(5 Marks)

```
class Alpha11 {
Alpha11( ) { System.out.println("alpha"); }
Alpha11(int x) { System.out.println("alpha"+x); }
}

class beta11 extends Alpha11 {
beta11( ) { System.out.println("Beta"); }
beta11(int y) { System.out.println("Beta"+y);
}
}

public class Gama11 extends beta11 {
Gama11( ) { System.out.println("Gamma"); }
Gama11(int z) { super(z+3);
System.out.println("Gamma"+z);}
public static void main(String[] args) {
Alpha11 g1 = new Alpha11(4);
beta11 g2 = new beta11(6);
Gama11 g3= new Gama11(7);
}
}
```

9. Give the output for the following code snippet.

(3 Marks)

```
class one {
void display() { System.out.println("Class One"); }
}
class two extends one {
void display() {
System.out.println("Class Two");
super.display();
} }
class three extends two {
void display() {
System.out.println("Class Three");
super.display();
} }
public class myclass {
public static void main(String[] args)
{
one b= new three();
two a=new two();
int i=1;
while(i<=3) {
if(i%2==0)
```

```
        b.display();  
    else  
        a.display();  
    i++;  
}  
}  
}
```

b) Distinguish between compile time and runtime polymorphism with an example. (2 Marks)