Assignment – 6

1. What is the output of following code

```
class Base {
  public final void show() {
      System.out.println("Base::show() called");
    }
}
class Derived extends Base {
    public void show() {
      System.out.println("Derived::show() called");
    }
}
public class Main {
    public static void main(String[] args) {
        Base b = new Derived();;
        b.show();
    }
}
```

2. What is difference between abstract class and interface with real time example?
3. What is abstraction show the code of real time example?
4. Create a class Demo. In class Demo, declare a member variable x of type int as final.
   In main method -
   a. Create an object of type Demo. Try to change the value of x.
   b. Now declare and implement a method display and make it final. Create a class DemoChild which extends Demo. In DemoChild, try to override the method display.
   c. Now declare the class DemoChild as final and try to extend the class DemoChild.

5. WAP to check whether final method of parent can be inherited in Child class.
6. Create interface Cake with a method declared as bake. Create 2 classes Strawberry, BlackForest both implementing Cake interface.
7. What is output of following code?

```
interface X
{
   void methodX();
}
class Y implements X
{
   void methodX()
   {
      System.out.println("Method X");
   }
}
```

8. Create interface IceCream with method eat and Juice with method drink, Create class Mastani which implements both interfaces.
9. Which of the following is true about interfaces in java?
    a. An Interface can contain following type of members.

    .....public, static, final fields (i.e. constants)

    .....default and static methods with bodies

    b. An instance of interface can be created.
    c. A Class can implement multiple interfaces.
    d. Many classes can implement same interface.

10. Write MusicalInstrument interface with play method. It also has common behavior (static) learnInstrument. Create Abstract class Sound with abstract method listenSound.Implement MusicalInstrument interface in PercussionInstrument and StringedInstrument classes.Also extend Sound class in both classes.Create object ‘Tabla’ of PercussionInstrument class and object ‘Violin’ of StringedInstrument class.call Paly, learnInstrument and listenSound methods of both objects.