Question Bank
Module 2
OOPS using Java (21CIC34)
Semester:3rd

1. Create a Java Class "Shape" with constructor to initialize the one parameter "dimension".Now create three sub classes of Shape with following methods (i) "Circle" with methods to calculate the area and circumference of the circle with dimension as radius. (ii) "Square" with methods to calculate the area and length of diagonal of the square with dimension as length of one side. (assuming length of each side of the square is same). (iii) "Sphere" with methods to calculate the volume and surface area of the sphere with dimension as radius of the sphere. Write appropriate main method to create object of each class and test every method. (CO2)
2. What is a class? What are its characteristics? Give its general structure. (CO2)
3. Write a note on object instantiation. (CO2)
4. What do you mean by instance variables? (CO2)
5. Write a java program to print the default values of instance variables. (CO2)
6. Write short notes on 1) dot(.) operator 2) new operator(CO2)
7. What is a constructor? What are the different types? Explain with examples. (CO2)
8. Differentiate constructors and methods(CO2)
9. Explain the two uses of this operator. (CO2)
10. What do you mean by instance variable hiding" How do you overcome it? (CO2)
11. Explain garbage collection with its advantages and disadvantages. (CO2)
12. Write a short note on finalize(0 method. (CO2)
13. Write a java program to implement stack that can hold 10 integer values. (CO2)
14. What are nested classes? Explain the different types with examples. (CO2)
15. What is the significance of a static block? Explain with an example. (CO2)
16. What is an inner class? Write a program to implement an inner class. (CO2)
17. Explain the characteristics of a static variable and static method with example(CO2)
18. What is inheritance? Mention the different types. Explain Multi level inheritance with example. (CO2)
19. A sub class constructor will call its immediate super class constructor. Justify the statement. (CO2)
20. Differentiate constructors and methods. (CO2)
21. Differentiate method overloading and overriding. (CO2)
22. Can we override static method in java? Explain. (CO2)
23. Discuss static and runtime polymorphism with example. (CO2)
24. Write short notes on a) final class b) abstract class(CO2)
25. With examples give two uses of super. (CO2)

26. Super class variable van Reference a subclass object. Justify the statement with an example.
27. Write a note on different access specifiers. (CO2)
28. Explain the importance of private access specifier in inheritance. (CO2)
29. How do you achieve run time polymorphism in java? Illustrate with an example. (CO2)
30. Explain Dynamic Method Dispatch (DMD) with example. (CO2)
31. Distinguish an abstract class from a concrete class(CO2)
32. Differentiate an abstract class from a final class. (CO2)
33. A final method can not be overridden. Illustrate with an example. (CO2)
34. Explain the significance of main method in java. (CO2)
35. Distinguish constructors and methods. (CO2)
36. Discuss the output of the following (CO2)

```
abstractclassdemo
{     publicinta;
    demo()
    {
        a = 10;
    }
      abstractpublicvoidset();
      abstractfinalpublicvoidget();
  }
 classTest extendsdemo
{
     publicvoidset(inta)
    {
        this.a = a;
    }
     finalpublicvoidget()
    {
        System.out.println("a = "+ a);
    }
     publicstaticvoidmain(String[] args)
    {
        Test obj = newTest();
        obj.set(20);
        obj.get();
    }
}
```

20.Private methods are final. Illustrate with an example. (CO2)
21. What is the output? Justify. (CO2)

```
publicclassMain {
    publicstaticvoidmain(String args[]) {
       String x = null;
       giveMeAString(x);
       System.out.println(x);
    }
    staticvoidgiveMeAString(String y)
    {
       y = "GeeksQuiz";
    }
}
```

22. Why final and abstract can not be used at a time? (CO2)
23. What is multiple inheritance? How it is implemented on java? Explain. (CO2)
24. What are interfaces? Explain with example. (CO2)
25. An interface can extend more than one interface but a class cannot extend more than one class. Illustrate with examples. (CO2)
26. Distinguish between a class and an interface. (CO2)
27. Distinguish an abstract class and an interface. (CO2)