

Fourth Semester B.Tech Degree Examination  
CS206 Object Oriented Design and Programming

Time: 3 Hours

Max. Marks: 100

PART-A

*Answer all questions. Each question carries 3 marks.*

1. Explain the declaration of array variable in Java. What is dynamic initialization? Give examples.
2. What is meant by polymorphism? Briefly explain the types of polymorphism.
3. What is the output of the following code? Justify.

```
class Test {  
    public static void main(String a[]) {  
        byte b = 50;  
        b = b * 2;  
        System.out.print(b);  
    }  
}
```

4. Write a note on the access control keywords in Java.

PART-B

*Answer any two full questions. Each question carries 9 marks.*

5. a) Explain object orientation concepts briefly. (6)  
b) Explain overloading in Java, with example. (3)
6. a) List the graphical diagrams defined by UML and illustrate with examples. (4)  
b) Explain parameter passing in Java, with suitable examples. (5)
7. a) Describe the use of constructor in Java, with suitable examples. (4)  
b) Describe the looping control statements in Java, with examples. (5)

PART-C

*Answer all questions. Each question carries 3 marks.*

8. Describe the use of abstract class in Java.
9. Explain the use of packages in Java.
10. Write a note on stream related classes.
11. What is thread synchronization?

PART-D

*Answer any two full questions. Each question carries 9 marks.*

12. a) Explain how multiple threads are created in a program, with example. (5)  
b) Write a Java program that accepts N integers through console and sort them in ascending order. (4)
13. a) Explain exception handling mechanism, with suitable examples. (5)  
b) Write a Java program that counts the number of words in a text file. (4)
14. a) What is dynamic method despatch? Give examples. (4)  
b) Write a program to create a package named *mypack*, containing a class *RightTriangle* in which a static method check whether three given sides of a triangle forms a right-angled triangle and returns that information. Import this package in another class. (5)

PART-E

*Answer any four full questions. Each question carries 10 marks.*

15. a) Explain delegation event model. (5)  
b) Explain how dynamic queries are executed in Java? (5)
16. a) Define swing. What are the advantages of swing over AWT components? (4)  
b) Explain type of statements in Java. Give examples. (6)
17. a) Describe the architecture of applet. (4)  
b) Explain the steps in connecting java program to database, with example. (6)
18. a) List any five methods of String class, give examples. (3)  
b) Write an applet that simulates a desk calculator, using AWT controls and event handling. It accepts two numbers from the user and performs computation(+, -, \*, /) based on the choice and displays the result. (7)
19. a) Write an applet which displays the x-y coordinates of mouse, when it is clicked. Use event handling mechanism. (6)  
b) Explain the use of graphics class in Java. (4)
20. a) How parameters are passed to an applet? (3)  
b) A table named Student exists with fields name, roll-no and marks for 3 subjects (mark1, mark2, mark3). Write a Java program to prepare a rank list (name, roll-no) of the students based on total marks and displays the same. (7)

*KTU STUDENTS*