

**PURBANCHAL UNIVERSITY  
2023**

**Bachelor in Information Technology (B.I.T.)/Fourth Semester/Final**

**Time: 03:00 hrs.**

**Full Marks: 80/Pass Marks: 32**

**BIT255CO: Programming in Java (New Course)**

*Candidates are required to give their answers in their own words as far as practicable.*

*Figure in the margin indicate full marks.*

**Group A**

**$2 \times 12 = 24$**

**Answer TWO questions.**

1. Define multi-threaded programming. Explain its application and importance. Write a program to create two threads, one thread is to display even numbers between 1 to 10 in 1 second and other thread is to display odd numbers between 10 to 20 in 2 seconds.  $2+3+7$
2. Differentiate between AWT and Swing. Write a Swing program using JFrame to calculate addition of two numbers input by the users and display the result when user clicks "Add" button and clear the field when user clicks "Clear" button. (Use JTextField and JButton)  $4+8$
3. Explain TCP and UDP. Write a program to create a chat application using TCP protocol and chat ends when any one of client and server says "goodbye".  $4+8$

**Group B**

**$7 \times 8 = 56$**

**Answer SEVEN questions.**

4. Why Java is called platform independent language? Explain multiple inheritance in Java with example.  $3+5$
5. What is Exception? What is user-defined Exception? What are different Exception handling techniques?  $2+2+4$
6. Compare method overloading with method overriding with examples.
7. Differentiate between applet and application. Explain applet life-cycle.  $4+4$

**Contd. ...**

8. What is JDBC? Write a program to connect mysql database and also insert a record in customer table having attributes: customer\_id, customername, customer\_address. 2+6
9. Explain Stub and Skeleton. Write a program to create distributed application using RMI. 3+5
10. What is Servlet? Write a program to create a user form (FirstName, LastName, Email) in jsp file and when the user clicks "Submit" button, the information should be printed by the Servlet class. Also do necessary mapping in web.xml file. 2+6
11. Write short note on any TWO: 2x4=8
- (a) Polymorphism
  - (b) FileReader and FileWriter
  - (c) Package

