NEPAL COLLEGE OF INFORMATION TECHNOLOGY
ASSESSMENT- FALL-2023

Level: Bachelor		Year: 2023
Programme: BE		Full Marks: 100
Course: Advanced Programming in Java		Pass Marks: 45
		Time: 3 hrs.

Candidates are required to answer in their own words as far as practicable.
The figures in the margin indicate full marks.
Attempt all the questions.

1. a) Explain the Java architecture and also the significance of bytecode. 7
   b) Explain thread priority in Java with a sample program.
   <div align="center">Or</div> 8
   Define error and exception. Create a custom exception class.

2. a) Differentiate between Java abstract class and interface with a 7
      sample program
   b) Define inheritance and its types. Why Java doesn't support 8
      multiple inheritance?

3. a) How are events handled in swing? Create a GUI application that 7
      asks for user's confirmation when the user tries to close the
      window. 8
   b) What are the pros and cons of JavaFX. Explain any two JavaFX
      layout managers.

4. a) Create a TCP client server application where the client sends a 7
      string and the server responds by returning the length of the string.
   b) Define RMI stubs and skeleton. Create an RMI application where a 8
      client can remotely invoke a method that checks whether the
      number given by the client is even or odd.

5. a) A table student consists of id, name, and program. Write a program 7
      to ask the user to enter the details and save them in the table. After
      every successful entry, the user must be prompted either to
      continue or quit.

Or

Differentiate between Statement and PreparedStatement. Write a   8
sample program to illustrate the usage of RowSet.

b) Create a servlet application with a form that lets use to enter roll
number and name. On form submission save the details in a SQL
database.

6.   a) Define dynamic web applications. Explain the lifecycle of Servlet   7
     b) Define the Singleton pattern. Write a sample program using a
       Singleton pattern with lazy instantiation.

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7.   Write short notes on: (**Any two**)   2×5
     a)   Session and Cookies
     b)   CORBA
     c) SQL injection