

Pre-University Examination Questions paper collection



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Pokhara University
Everest Engineering College
Final Internal Assessment
Spring- 2025

Level: Bachelor

F.M. 100

Program: BE CMP (4th Semester)

P.M. 45

Faculty: Science & Technology

Time: 3hrs

Section: A

Subject: Advance Programming with JAVA

Attempt all the questions.

- | | | |
|----|---|---|
| 1. | a) Explain the java architecture and significance of class path. Differentiate between error and exception. | 7 |
| | b) Write a java program to create Rectangle class with data member length and breadth. Include methods getData() and displayArea() in the class. Finally create an object of Rectangle class and display its area. | 8 |
| 2. | a) Define package. Explain the types of access modifiers in java. | 7 |
| | b) Define subclass and super class. Explain different types of inheritance in detail. | 8 |
| 3. | a) Write a GUI program using components to find factorial and cube of number. Use TextField for giving input and label for output. The program should display factorial if user press mouse on result button and cube if user release mouse from result button. | 7 |
| | b) What are the pros and cons of JavaFX, Explain any two JavaFX layout managers. | 8 |
| 4. | a) Create a TCP client server application where the client sends a string and the server responds by echoing the same string in uppercase. | 7 |
| | b) Define RMI stubs and skeleton. Create an RMI application where a client can remotely invoke a method that identify either the given number is odd or even. | 8 |
| 5. | a) Differentiate between GET and POST methods. Write java program to depict sessions and cookies. | 7 |
| | b) Write a program to extract the user information such as Reg_no, Name, Address, Phone_no from the database and display in the console | 8 |

6. a) Explain life cycle of servlet. Create a HTML file with principal, time and rate. Then create a servlet file that reads values from the HTML form, calculates simple interest and display it. 7
- b) Why do we need design patterns? Explain Singleton Pattern and Abstract factory pattern in detail. 8
7. Write short notes on: (Any two) 2×5
- a) SQL injection
 - b) Multithreading in java (unit 7)
 - c) CORBA

LUMBINI ENGINEERING COLLEGE (LEC)

Final Internal Exam-Spring

Level: Bachelor

Year: 2025

Program: BE Computer- 4th Sem

Full marks: 100

Course: Advance Java Programming

Pass marks: 45

Attempt all the questions.

Time: 3Hrs

Candidates are required to give their answer in their own words as far as practicable

1.a) Define class and object in java. What is the importance of constructor? Write a java program to perform constructor overloading. (8)

b.) What are the benefits of inheritance? Explain various forms of inheritance with suitable code segments (7)

2. a) Explain about try, catch and finally block. Write a program to show the use of try, catch and finally clause. (7)

b) Illustrate the usage of this keyword. Explain about methods? Explain Method overloading? explain about access modifiers? Explain nested classes. (8)

3. a) What is interface? How does it support multiple inheritance in java (7)

b) Design a GUI form using swing with a text field, a text label for displaying the input message "Input any integer number", and two buttons with caption CheckPalindrome, Reverse. Write a complete program for above scenario and for checking palindrome in first button, reverse it after clicking second button. (8)

Or

Define JDBC drivers. Mention all four types of JDBC drivers and contrast them with their advantages and disadvantages, finally when to use which drivers.

4. a) List and explain the features of HTTP protocol. If HTTP is stateless protocol then with reference to cookies, explain how the server remembers a client over the internet. (8)

b) Explain the architecture of JSP in contrast to MVC. Mention its usefulness in application development and how it separates the content, behavior and presentation. (7)

5. a) What is socket? How can you write java programs that communicate with each other using TCP sockets? Discuss with suitable example. (8)

b) . What is Java Mail API ? How can you use this API to send email messages? (7)

6. a) Compare JavaFX with swing. Explain HBox and VBox layouts of JavaFX. (8)

b) Explain the significance of cookies and sessions with suitable example? (7)

7. Write Short Notes on any two (2X5)

a. InetAddress class

b. ORM

c. Singleton and Abstract Factory design.

GANDAKI COLLEGE OF ENGINEERING AND SCIENCE

Level: Bachelor Semester: Spring Year : 2025
Programme: BE CE IV Full Marks: 100
Course: Advanced Programming with Java Pass Marks: 45
 Time : 3hrs.

Candidates are required to give their answers 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 significance of class path. 7
Differentiate between error and exception.
- b. Define Collection Framework in Java. Explain the different 8 components of java collection framework.
2. a. Define interface. Write Java program that override methods (getUserValue()) and (displayUserDetail()), where getUserValue() is defined to get user detail(name, address, age) and displayUserDetail() to display user detail. 8

Or

What are the implications in Java when defining a variable, method and class as final? Explain the various access modifiers in Java and their significance.

- b. Why do we need swing components? Explain the uses of 7 check boxes and radio buttons in GUI programming.
3. a. Write a program to create a Frame that has two TextField 8 components, one Label and a Button. When the user clicks on the button, calculate the sum of the values entered in the first and second TextField and display the result on the third Label.

- b. Create a TCP client server application where the client sends a string and the server responds by echoing the same string in upper case. 7
4. a. Define RMI stubs and skeleton. Create an RMI application where a client can remotely invoke a method that sends the sum of any two given integers. 7
b. Define Java Socket Programming. Write java program to create own client and server. 8
5. a. Briefly describe JDBC-ODBC types of bridge and driver in java. 8
Or
Write a program(WAP) to insert data of any students with schemas(name, age, semester, university, status). By default SQL connector is to be used(if comfortable with any database connector. Free to describe and use accordingly)
- b. Explain the life cycle of servlet. 7
6. a. Why do we need design patterns? Explain Singleton Pattern and Factory Method Pattern in detail. 7
b. Explain the importance of concurrency and multithreading in Java. How multithreading is performed in Java? 8
7. Write short notes on (Any Two) 2×5
a. ORM
b. UDP Socket
c. JavaMail

Date:	2082/04/09	Full Marks	70
Level	BE	Time	
Programme	BCE		
Semester	IV		2 hrs

Subject: - Advance Programming in Java

- ✓ Candidates are required to give their answers in their own words as far as practicable.
- ✓ Attempt any seven questions.
- ✓ The figures in the margin indicate Full Marks.
- ✓ Assume suitable data if necessary.

1. How Java is Platform Independent. Explain about JVM, JRE, and JDK? [10]
2. What is inheritance? Does Java support direct multiple inheritance? Explain with an example [10]
3. Explain exception handling. How can we create a user-defined exception [10]
4. What is the interface? Create an interface Bank with three methods: deposit, withdraw, and showBalance). Create a class AbcBank that should inherit from the Bank interface. [10]
5. WAP to create a swing application with 3 text fields and 1 button, when the button is clicked. Show the sum of the value of the first and second text fields in the third text field [10]
6. Define various layout managers used in JavaFX. Write a program to show the usage of one layout manager. [10]
7. Define JDBC. What are the steps for JDBC? [10]
8. Write a program to send "Hello Java" from client to server using TCP. [10]
9. What is Multithreading in Java? Create a program to show the usage of multi-threading. [10]
10. Write short notes (any 2) [2*5=10]
 - a) URL b) JSP Request
 - c) Java Mail API d) RMI

Madan Bhandari College of Engineering

Urlabari-3, Morang

Final Internal Examination (Spring 2025)

Level: Bachelor

Full Marks: 100

Programme: B.E. (Computer)

Pass Marks: 45

Year/Part: II/II

Time: 3 hrs

Subject: - Advanced Java Programming

- ✓ Candidates are required to give their answers in their own words as far as possible.
- ✓ Attempt all question

1. a) Define Class Path? Write a program with custom exception handler that handle arithmetic Exception. 7

- b) Explain the architecture of Java, including the role of the JVM, JRE, and JDK. 8
OR

Define collection framework in java. Explain the different components of java collection Framework.

2. a) What are the implications in Java when defining a variable, method, and class as final?
-Explain in the various access modifiers in Java and their significance. 8

- b). Define abstraction. Write Java program that override methods (getUserValue() and displayUserDetail()). Where getUserValue() is defined to get user detail (name, address, age) and displayUserDetail() to display user detail. 7

3. a). Pros and Cons of JavaFX. Create GUI application with two buttons "RED" and "Green".
When Clicking "RED" button change background of "GREEN" button to red and clicking "Green" Button change background of "RED" button to green. Also, console button clicked Message. 8

- b). Define stage and scene in JavaFX. Explain any two JavaFX layout managers. 7

4. a) Explain RMI architecture. Develop RMI application where client request to identify given Number is Odd or Even. 8

- b). Write a TCP client server program, where a client sends an integer value and server responds by sending the squared value of that integer. 7

5. a). Differentiate between Statement and PreparedStatement. Consider db_college and tbl_student as database name and table respectively where a tbl_student has columns name, faculty and batch. Write Console application with CREATE, READ, UPDATE and DELETE queries only using Prepared Statement. 8

- b). What is a JDBC driver? Explain the different JDBC drive types and their configurations?

OR

Write all the steps to connect Java application with any Database. Insert student detail (roll, Name, address, age) into table "student_tbl". 7

6. a). Describe the life cycle of a servlet. Explain the use of doGet() and doPost() methods of the Servlet with an example. 8

- b). Create a Servlet application to showcase the concept of session and cookies. 7

7. Write short notes on: (Any two) 10

- a). Design patterns.
- b). Over view of ORM
- c). RMI vs . CORBA

8

7

10

Universal Engineering & Science College

Affiliated to Pokhara University

Chakupat, Lalitpur

Level: Bachelor

Semester: 4th

Year : 2025

Programme : BE Computer

Time : 3 hours

Full Marks: 100

Subject: Advanced Programming with Java

Pass Marks: 45

Pre-Board Examination-2082 (Spring 2025)

Candidates are required to give their answer in their own words as far as possible. The figure in the margin indicate full marks

Attempt all question.

- a) Explain the java architecture also discuss about platform independence in java and how it is achieved. [5+3]
- b) Differentiate between throw and throws keyword. Write a java program to throw custom exception when a user enter the “age” <18 with message “invalid user”. [2+5]
- a) Define inheritance and its type. Why java doesn’t support multiple inheritance? Show an example of how can we achieve it using simple program? [4+4]
- b) Describe abstract class and interface in java with sample program example. Also mention difference between them. [4+3]
- a) Define applet and show the lifecycle of applet. Also demonstrate lifecycle using sample program. [4 +4]
- b) What do you mean by event delegation? Write a program to make a sample form with “email”, “password” and “login button” using null layout. [2+5]

OR

- b) What do you mean by layout manager? List out different layout manager supported in swing and show a sample program to represent flow layout. [1+1+5]

a) Differentiate between TCP and UDP. Write a TCP socket programming to send two values 4 and 5 to server with server responding the calculated sum of two number and display result on client side. [2+6]
b) Discuss the working of CORBA? [7]

a) Define JDBC. List out different types of JDBC drivers and explain about type 1 driver in detail. [1+1+6]
b) Write a JDBC program to display records: id, name and email from the table "student" with "id=8". [2+5]

a) Define Servlet. Explain the lifecycle of Servlet in detail. [2+6]
b) Write a Servlet program to send response "Welcome to world of JAVA". [7]

Write short notes on: (Any two) [2*5=10]

- a) Design Pattern and its types
- b) SQL Injection
- c) Multithreading in java

b) Define computational complexity theory. Explain Class P, Class NP and NP complete with suitable examples.

(7)

7. Write short notes on (Any two)

(2*5)

- a) Elimination of useless symbols
- b) function and its types
- c) alphabet and language
- d) Ardens theorem

NEPAL COLLEGE OF INFORMATION TECHNOLOGY
Assessment Spring 2025

Level: Bachelor

Year: 2025

Programme: BECE/IT

Full Marks: 100

Course: Advanced Programming with 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. Explain the Java architecture and also the significance of bytecode. 7
 Explain inheritance and its types. Why is multiple inheritance not allowed in java using classes and how can we achieve it? 8

Or

Define error and exception. Create a custom exception class.

2. Differentiate between Java abstract class and interface with a sample program 7
 Define inheritance and its types. Why Java doesn't support multiple inheritance? 8
3. How are events handled in swing? Create a GUI application that asks for user's confirmation when the user tries to close the window. 7
 What are the pros and cons of JavaFX. Explain any two JavaFX layout managers. 8
4. Create a TCP client server application where the client sends a string and the server responds by returning the length of the string. 7
 Differentiate between RMI and CORBA. Create an RMI application where a client can remotely invoke a method that checks whether the number given by the client is even or odd. 8
5. A table student consists of id, name, and program. Write a program 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 7

Or

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

- b) ~~Write a program to display all the average marks and total number of records in a SQL database.~~
6. a) Explain Servlet lifecycle. Create a servlet application where users send 7 a string and the server checks if the string is palindrome or not.
b) Define design pattern and its importance. With a sample code explain 8 Singleton pattern.
7. Write short notes on: (Any two) 2×5
a) ORM
b) Session vs Cookies
c) SQL injection

Nepal Engineering College

Final Assessment

Level:	Bachelor	Year:	2025
Programme:	BCT	Full Marks:	100
Year/Part:	II/II	Pass Marks:	45
Subject:	Advanced Programming with Java	Time:	3 hrs

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

1. a. What is the use of package in Java? Explain. Write a java program to create following types of multidimensional array and print the values as follows: [8]
1
2 3 4
5 6
- b. What do you understand by Collections in Java? Explain Map interface in java illustrating data addition and reading from map. [7]
2. a. Explain the advantage of inheritance. Does java support multiple inheritance? Explain [8]
- b. Differentiate between method overloading and method overriding. Explain runtime polymorphism with an example. [7]
3. a. What do you understand by event handling? Write a java program to create a swing application that has two radio buttons labelled as male and female. On clicking the radio buttons, create a pop-up message using optionpane saying **Hello sir** if radio button labelled male is clicked and **Hello madam** if radio button labelled female is checked. [8]
- b. Explain the lifecycle of a JavaFX application. Explain about Box Layout and StackPane Layout in JavaFX. [7]
4. a. Differentiate between TCP and UDP. Write a TCP client server application where client sends two number and server replies calculating the product of the numbers. [7]
- b. What is stub and skeleton in RMI? Write an RMI application to read two words from user. If both the words begin with A then reply by concatenating the uppercase value of both words else by concatenating the reverse of both words. [8]
5. a. Differentiate between statement and preparedstatement. Explain different types of JDBC drivers. [7]
- b. Consider **db_college** and **tbl_student** as database name and table name respectively where **tbl_student** has columns **name**, **faculty** and **batch**. Create console application illustrating CRUD using prepared statement. [8]

6. a. Differentiate between doGet() and doPost(). Write a servlet program to [8]
read a number from user and display whether that is perfect square or
not.
- b. Differentiate between JSP and servlet. Explain the elements of JSP. [7]
7. Write short notes on: *(any two)* [2*5=10]
- a. ORM
 - b. MVC
 - c. CORBA

POKHARA ENGINEERING COLLEGE
Internal Assessment Examination

Level: Bachelor Semester: Spring Year : 2025
Programme: Computer Full Marks: 100
Course: Advance programming in java Pass Marks: 45
Time : 3hrs

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

The figures in the margin indicate full marks.

Attempt all the questions.

1. a) Define abstraction. Write a Java program that overrides methods `getUserValue()` and `displayUserDetails()`. Where `getUserValue()` is defined to get user details (name, address, age) and `displayUserDetails()` to display user details. (8)
b) Explain the architecture of Java, including the roles of the JVM, JRE, and JDK. (7)
2. a) Define the Collection framework in Java. Explain the different components of the Java Collection framework with examples of when to use each. (8)
b) Differentiate between checked and unchecked exceptions in Java. Explain the try-catch-finally block for Java exception handling with a suitable code example. (7)
3. a) Explain RMI architecture. Develop an RMI application where the client requests the server to identify if a given number is Odd or Even. (8)
b) Write a TCP client-server program in Java. The client should send a text message (e.g., "Hello Server") to the server, and the server should respond by converting the message to uppercase and sending it back to the client. (7)
4. a) What is a JDBC driver? Explain the different types of JDBC drivers and their configurations, highlighting the advantages and disadvantages of each type. (8)
b) Differentiate between Statement and PreparedStatement in JDBC. Write a console application using PreparedStatement to insert a new student record (name, faculty, batch) into a table named `student` within a database named `db_college`. (7)
5. a) Explain the Servlet life cycle in detail. What are the advantages of Java Servlets over CGI? (8)
b) Explain JSP (JavaServer Pages) with its syntax, advantages, disadvantages, and a life cycle diagram. (7)
6. a) Briefly explain about MVC (Model-View-Controller) programming architecture. Compare Thick client with Thin client applications. (8)
b) What are ASP.NET server controls? Explain the typical request life cycle of an ASP.NET application. (7)
7. Write short notes on: (any two) 5*2
 1. Servlet vs. JSP
 2. RMI vs. CORBA
 3. Design Patterns

SCHOOL OF ENGINEERING

Level: Bachelor

Programme: BE

Course: Advanced Programming with Java

Year : 2025

Full Marks: 100

Pass Marks: 45

Time : 3hrs.

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

The figures in the margin indicate full marks.

Attempt all the questions.

1. a) List features of Java. Write all the necessary steps to compile and execute a simple java program. 8
- b) Why is exception handling important? Explain the use of throw and throws keyword with suitable programming examples. 7
2. a) Distinguish between classes, interfaces, and inheritance. Why does Java restrict multiple inheritance with classes but allow it with interfaces? Support your explanation with a programming example. 8
- b) Differentiate between overloading and overriding. Explain final class and method in java. 7
3. a) Write a program to demonstrate a login form using JavaFX with username and password field with a sign in button. Upon clicking the button, display suitable welcome message if the user provides valid login credentials. Assumptions can be made if necessary. 7
- b) Design the following menu structure:
 File → Close
 Color → Red, Blue 8
 When the user clicks "Close", the application should exit. Selecting a color from the "Color" menu should change the background color of the frame accordingly.
4. a) Write TCP socket program to input a string in client, the server check if the string is palindrome or not and sends result back to client, the client then displays the result. 7
- b) What is distributed application? Explain the architecture of RMI. 8
5. a) Explain the concepts of IDL and provide a simple CORBA program example. 8

b) What is the importance of JDBC driver? WAP to display all the student records in JTable when user clicks Display Button. Assumptions can be made if necessary.

7

6. a) Create suitable student HTML registration form with details like id name and roll. When user clicks the submit button store this information in the database using Servlet or JSP. Assumption can be made if necessary.

8

Or

7

Define session and cookies. Explain Session with suitable programming example.

b) Define Design Pattern. Differentiate between Factory and Abstract Factory Design Pattern.

7. Write short notes on: (Any two)

2×5

- a) GET vs POST
- b) SQL Injection attack
- c) Java Collection

UNITED TECHNICAL COLLEGE

Level: Bachelor

Programme: BE

Course: Advanced Programming with Java

Semester: Fourth

Year : 2025

Full Marks: 100

Pass Marks: 45

Time : 3hrs.

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

The figures in the margin indicate full marks.

Attempt all the questions.

- What is meant by Path and CLASSPATH variable? Explain characteristics of java in brief 7
- How interfaces are different from class? Explain interface extension and implementation with example. 3
- Why do we need to handle the exception? Distinguish error and exception, write a program to demonstrate your own exception class. 8
- What are different states of an applet? Explain applet Life Cycle with suitable state diagram.
- a) Design a GUI form using swing with a text field, a text label for displaying the input message "Input any String" and two buttons with caption CheckPalindrome and Extract vowels. Write a complete program for above scenario and for checking palindrome display whether a string is palindrome or not after clicking in first button, and extract the vowels from it after clicking second button.
- Compare and contrast JavaFX with swing. Explain HBox and VBox layouts of JavaFX with suitable examples.
- a) What is URL and what are its components? Write a program to extract different components of a URL and display them. 7
- b) What is purpose of Java mail API? Explain the steps used in sending email by using Java mail API. 8

OR

What is RMI? Write server and client program by using RMI such that the program finds factorial of n.

a) A database "testdb" contains a table "employee" with some records having id, name, post, salary. Write a java program to display only those employees whose salary is more than 45000. 7

b) Create a simple servlet that reads and displays data from HTML form. Assume form with two fields **username** and **password**. 8

label

Text b

- a) What are the differences between get and post method? Explain the usages of cookies to maintain session in servlet with suitable example. 7
- b) What is MVC architecture framework? Explain its layers with suitable example including java code. 8

7. Write short notes on: (Any two) 2×5

- a)** Hibernate
b) Life cycle of Servlet
c) CORBA
d) Row Set

National Academy of Science and Technology
(Affiliated to Pokhara University)
Dhangadhi, Kailali

Pre-University Examination

Level: Bachelor

Semester: IV_Spring

Year : 2025

Program: B.E. Computer

F.M. : 100

Course: Advanced Programming with Java

P. M. : 45

Time : 3 Hrs.

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

Attempt all the questions.

- 1 a) Define class and object. Write down the code to create an Employee class having three private properties, two constructor one for default value and another for parameterized value. Two more methods to set and display values. Create another class having main method and create two objects one for default and another for parameterized constructor and call necessary methods. (8)
- b) Define exception handling. Explain with code example how do you handle user defined exception. (7)
- 2 a) Differentiate between abstract class and interface. How you achieve multiple inheritance in java. Explain with code example. (8)
- b) Define event handling. Explain the source and listener with different classes. (7)
- 3 a) Wrote down the JavaFx code to take two number as input field and three button (+, -, x) and perform respective function when user clicks on the respective button. (8)
- b) Define Swing. Explain different swing controls used in GUI app development with code example. (7)
- 4 a) Define UDP. Write down the UPD client server program when client enter a number the server will return the square of that number. (8)
- b) Explain RMI with architectural diagram in details. Also write simple hello world distributed application. (7)

OR

Write down distributed RMI client server program to show profit or loss and percentage in the client. The cp and sp are passed from client and profit loss is calculated by the server. (7)

5 a) Differentiate between Statement and Prepared Statement. Write down the code example to select all record and individual record of student from tbl_students and assume at least 4 columns on your own. (8)

OR

Why do we need database programming? Write down the steps to connect to database with code example. (8)

b) Define Servlet. Explain servlet life cycle diagram in details with simple example. (7)

6 a) Write a program to design a JSP form having name, email and password and store to database using servlet. (8)

b) Define multithreading with diagram. Write a program to illustrate an example of synchronized block and method in multi-threading. (7)

OR

Why do we need design pattern? Explain Singleton and factory pattern in details with code example. (7)

7. Write short notes (on any two) (2x5=10)

- a) Spring Boot and Hibernate
- b) Session and Cookies
- c) Transaction Management