Graphic Era
HILL UNIVERSITY
Established by an Act of the State Legislature of Uttarakhand (Adhinyam Sankhya 12 of 2011)
University under section 2(f) of UGC Act, 1956

End Term (Even) Semester Examination May-June 2025

Roll no...............................

Name of the Program and semester: **MCA - II**
Name of the Course: **Advanced Java Programming**
Course Code: **TMC-202**

Time: 3 hour   Maximum Marks: 100

Note:
- *(i)* All the questions are compulsory.
- *(ii)* Answer any two sub questions from a, b and c in each main question.
- *(iii)* Total marks for each question is 20 (twenty).
- *(iv)* Each sub-question carries 10 marks.

Q1.   (2X10=20 Marks) **CO-1**

a. What is the difference between String class over StringBuffer? Write a program to find sum of numeric digits of a string input by user at run time.
Example: Input String :he12llo34   Output : 10

b. What is method-overriding? Write a program to show the use of super keyword. What are various collection framework classes?

c. What is the use of protected keyword? Explain by the help of example where we can use a subpackage class. Write a program to show the working of static import?

Q2.   (2X10=20 Marks) **CO-1, CO-2**

a. Write a java program to handle any two unchecked exceptions. where do we use the user-defined exception?

b. Write a java program to implement MouseEvent and MouseListener interface?

c. Define Servlet. Explain the basic servlet structure and its life cycle methods.

Q3.   (2X10=20 Marks) **CO-1, CO-2, CO-3**

a. What are the basic steps to create a JDBC connection? Write a JDBC program to store and retrieve records from the database.

b. Write a Servlet program to read data from a HTML form (Languages(known) data from check boxes and Result data from radio buttons) and display.

c. What is the role of InetAddress class in java? Write a code to send a string from machine1 to machine2, modify it by converting the small alphabet into capital and send back the string to machine1 and display edited string there.

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Q4.   (2X10=20 Marks) **CO2, CO-4**

    a.   Write a java program to accept and print the details of an Employee during runtime. The details will include name, department, Designation, Age and salary. The program should raise an exception if user inputs incorrect data. The entered value should meet the following conditions:

        (i).   The first letter of Employee's name should be in uppercase.
        (ii).   Employee's age must be between 25 and 60.
        (iii).   Salary must not exceed Rs. 150000.
        If the above conditions are not met, then the application should raise an exception and execute.

    b.   What are the needs, benefits and advantages of JSP?

    c.   What is the use of implicit objects in jsp? How can we use bean class in a jsp page? What is web.xml file?

Q5.   (2X10=20 Marks) **CO-3, CO-5**

    a.   Explain the different types of JSP tags with an example.

    b.   Write a code in Java displaying the usage of get and post method in a user registration form.

    c.   Write a program to add any data on cookies and, also access these data from cookies.