NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

B.Tech

SEM: III - THEORY EXAMINATION (2023 - 2024)

Subject: Object Oriented Techniques using Java

Time: 3 Hours   Max. Marks: 100

General Instructions:

IMP: *Verify that you have received the question paper with the correct course, code, branch etc.*

1. This Question paper comprises of three Sections -A, B, & C. It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.

2. Maximum marks for each question are indicated on right -hand side of each question.

3. Illustrate your answers with neat sketches wherever necessary.

4. Assume suitable data if necessary.

5. Preferably, write the answers in sequential order.

6. No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.

SECTION-A   20

1. Attempt all parts:-

1-a.   Using _____, we can force immediate termination of a loop [CO1]   1

      (a)   break

      (b)   continue

      (c)   return

      (d)   none of the above

1-b.   The main aim of OOPS is to [CO1]   1

      (a)   bind the code and data

      (b)   bind the class and object

      (c)   bind the code only

      (d)   bind the data only

1-c.   If two methods have same name but different parameter list then it is called_____ [CO2]   1

      (a)   Method overriding

      (b)   Method overloading

      (c)   Operator overloading

      (d)   None of these

1-d.   Java _____ is invoked at the time of object creation. [CO2]   1

      (a)   constructor

      (b)   class

(c) method

(d) array

1-e. Which constructor is used to create an empty String object?[CO3] 1

(a) String(String str)

(b) String()

(c) String(String helper)

(d) All of the mentioned

1-f. _____ can be used to concatenate two or more String objects?[CO3] 1

(a) Operators +

(b) Operators ++

(c) String (operator)

(d) None of the mentioned

1-g. Which of these classes are used by Byte streams for input and output operation? [CO4] 1

(a) Input Stream

(b) InputOutputStream

(c) Reader

(d) All of the mentioned

1-h. The two basic streams used are[CO4] 1

(a) input and output streams.

(b) in and out streams.

(c) input and out streams.

(d) in and output streams.

1-i. Set has _____ method. [CO5] 1

(a) contains(Object o)

(b) contains()

(c) contains(String str)

(d) All of the above

1-j. What does the following code do?
smt=con.createStatement(); [CO5] 1

(a) A Prepared Statement object is created to send sql commands to the database

(b) A Statement object is created to send sql commands to the database

(c) A callable Statement is created to send sql commands to the database

(d) A Statement object is created to execute parameterise SQL commands

2. Attempt all parts:-

2.a. Explain class diagram. [CO1] 2

2.b. Can A Class Implement More Than One Interface In Java? [CO2] 2

2.c. What is the first keyword used in a Java application development?[CO3] 2

| 2.d. | How would you differentiate between Daemon Thread and user Thread?[CO4] | 2 |
| 2.e. | Define layout manager. [CO5] | 2 |

SECTION-B   30

3. Answer any <u>five</u> of the following:-

3-a.	How to take an input from a user with the help of scanner class in JAVA? Explain using JAVA code. [CO1]	6
3-b.	Describe the working of if-else-if ladder. [CO1]	6
3-c.	What are the differences between this and super keyword? [CO2]	6
3-d.	Explain a. defining a class b. creating objects. [CO2]	6
3.e.	Differentiate between error and exception?[CO3]	6
3.f.	Explain with the help of example that how can we pause the execution of a thread for 100ms.[CO4]	6
3.g.	Write a Java Program to implement HashMap. [CO5]	6

SECTION-C   50

4. Answer any <u>one</u> of the following:-

| 4-a. | Write a program to print the factorial of any number using any looping statement. [CO1] | 10 |
| 4-b. | Differentiate between entry controlled and exit controlled loop. Give examples. [CO1] | 10 |

5. Answer any <u>one</u> of the following:-

| 5-a. | Explain java class creation and object referencing to store and print the details of a student as roll no, name, branch and section . [CO2] | 10 |
| 5-b. | What is polymorphism in java? Can we achieve polymorphism through data member? Write the example program of compile time polymorphism. (Hint- Can use Add/Subtract methods).[CO2] | 10 |

6. Answer any <u>one</u> of the following:-

| 6-a. | Write a Java program to handle an ArithmeticException divided by zero by using try, catch and finally blocks.[CO3] | 10 |
| 6-b. | Write a complete java program to handle the following exceptions I. InputMismatchException, II. ArrayIndexOutOfBoundsException, III. NumberFormatException.[CO3] | 10 |

7. Answer any <u>one</u> of the following:-

| 7-a. | How multithreading ensures concurrent execution? Explain with the help of example, how can we check if the thread holds the lock on specified object?[CO4] | 10 |
| 7-b. | Explain the concept of Daemon thread. Can we transform the user thread into daemon thread if that is started? Explain with with the help of example.[CO4] | 10 |

8. Answer any <u>one</u> of the following:-

| 8-a. | How does HashMap handle collisions in Java? [CO5] | 10 |
| 8-b. | Discuss types of container in AWT. [CO5] | 10 |

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