

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

B.Tech.

SEM: III - CARRY OVER THEORY EXAMINATION - SEPTEMBER 2022

Subject: Object Oriented Techniques using Java

Time: 3 Hours

Max. Marks: 100

General Instructions:

1. The question paper comprises three sections, A, B, and C. You are expected to answer them as directed.
2. Section A - Question No- 1 is 1 marker & Question No- 2 carries 2 mark each.
3. Section B - Question No-3 is based on external choice carrying 6 marks each.
4. Section C - Questions No. 4-8 are within unit choice questions carrying 10 marks each.
5. 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. The widely used diagram for construction in object oriented languages [CO1] 1
- (a) Class diagram
 - (b) Object Diagram
 - (c) Component diagram
 - (d) Deployment diagram
- 1-b. Java provides statements that can be used to control the flow of Java code are called [CO1] 1
- (a) Decision making statements
 - (b) Looping statements
 - (c) Branching Statements
 - (d) Control Flow statements
- 1-c. Which concept allows you to reuse the written code? (CO2) 1
- (a) Encapsulation
 - (b) Abstraction
 - (c) Inheritance
 - (d) Object

- 1-d. Which among the following best defines single level inheritance? [CO2] 1
- (a) A class inheriting a derived class
 - (b) A class inheriting a base class
 - (c) A class inheriting a nested class
 - (d) A class which gets inherited by 2 classes
- 1-e. In which of the following package Exception class exist?[CO3] 1
- (a) java.util
 - (b) java.file
 - (c) java.io
 - (d) java.lang
- 1-f. Which of this method of class StringBuffer is used to concatenate the string representation to the end of invoking string?[CO3] 1
- (a) concat()
 - (b) append()
 - (c) join()
 - (d) concatenate()
- 1-g. The keyword that is used to protect the methods from simultaneous access in Threads is _____ [CO4] 1
- (a) save
 - (b) synchronized
 - (c) Both
 - (d) This task is not possible in threads
- 1-h. readBoolean() reads one byte and returns true if that byte is nonzero, false if it is zero. [CO4] 1
- (a) TRUE
 - (b) FALSE
- 1-i. AWT stands for ? (CO5) 1
- (a) All Window Toolkit
 - (b) Abstract Work Toolkit
 - (c) Abstract Window Toolkit
 - (d) Abstract Window Text
- 1-j. Which of these events generated when a button is pressed? [CO5] 1

- (a) ActionEvent
- (b) WindowEvent
- (c) ItemEvent
- (d) KeyEvent

2. Attempt all parts:-

- | | | |
|------|---|---|
| 2.a. | What is the difference between classes and objects? [CO1] | 2 |
| 2.b. | Can A Class Implement More Than One Interface In Java? [CO2] | 2 |
| 2.c. | What is the naming convention to be followed for declaring a user-defined package in Java application development?[CO3] | 2 |
| 2.d. | Explain wait(), notify(), and notifyAll(). [CO4] | 2 |
| 2.e. | How can a GUI component handle its own events? [CO5] | 2 |

SECTION B

30

3. Answer any five of the following:-

- | | | |
|------|---|---|
| 3-a. | Draw an object diagram of order management system. [CO1] | 6 |
| 3-b. | Draw a class diagram of Student class and explain how the access modifiers are represented in the class diagrams? [CO1] | 6 |
| 3-c. | Explain with suitable example
a. creating an array.
b. initializing an array.
c. variable size array. [CO2] | 6 |
| 3-d. | Explain garbage collection in java. (CO2) | 6 |
| 3.e. | Using try catch, write a java program to illustrate exception handling for divide by zero[CO3] | 6 |
| 3.f. | Differentiate between input stream class and Reader class. [CO4] | 6 |
| 3.g. | Explain Lists with help of program. [CO5] | 6 |

SECTION C

50

4. Answer any one of the following:-

- | | | |
|------|--|----|
| 4-a. | Write a program to display all even numbers from 100 to 50 using all loops. [CO1] | 10 |
| 4-b. | What are command line arguments? How are they useful? Write a program to compute the sum of the digits of an input number (Using command line arguments) eg if 4523 is an integer then the sum of digits displayed will be 14. [CO1] | 10 |

5. Answer any one of the following:-

- 5-a. Write a program for multilevel inheritance in java. [CO2] 10
- 5-b. Explain single inheritance .Write a java program for single inheritance. [CO2] 10
6. Answer any one of the following:-
- 6-a. Write a JAVA application that uses string method to compare two strings input by the user and displays output whether the first string is less than equal or greater than the second.[CO3] 10
- 6-b. Write a java code to change upper case to lower case in a given string.[CO3] 10
7. Answer any one of the following:-
- 7-a. What is the difference between thread and a process? Explain the concept of Inter Thread Communication and describe the role of wait(), notify(), and notifyAll() methods in inter thread communication. [CO4] 10
- 7-b. Explain the difference between User Thread and Daemon Thread using programming example. [CO4] 10
8. Answer any one of the following:-
- 8-a. Differentiate between List and ArrayList. Create a class TestArrayList having main method. Perform following functionality. [CO5] 10
1. Create an ArrayList having fruits name of type String.
 2. Store different fruit names. (Try to add duplicate fruit names).
 3. Print all fruit names.
 4. Print the first and last fruit names.
 5. Print the size of ArrayList.
 6. Remove a particular fruit from ArrayList.
- 8-b. Compare Array and ArrayList with example[CO5] 10