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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

B.Tech

SEM: IV - THEORY EXAMINATION (2022-2023)

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. | Redefining of information is (CO1) | 1 |
| | (a) Inheritance | |
| | (b) Encapsulation | |
| | (c) Abstraction | |
| | (d) Polymorphism | |
| 1-b. | JAVA uses _____ to represent characters. (CO1) | 1 |
| | (a) Unicode | |
| | (b) ASCII code | |
| | (c) Byte code | |
| | (d) none of the above | |
| 1-c. | The feature that allows the same operations to be carried out differently depending on the object (CO2) | 1 |
| | (a) polymorphism | |
| | (b) polygamy | |

- (c) inheritane
(d) multitasking
- 1-d. Constructor name must be same as its ____ name. (CO2) 1
(a) object
(b) class
(c) method
(d) derived class
- 1-e. Which of the following statement is correct? (CO3) 1
(a) replace() method replaces all occurrences of one character in invoking string with another character.
(b) replace() method replaces only first occurances of a character in invoking string with another character.
(c) replace() method replaces all the characters in invoking string with another character.
(d) replace() replace() method replaces last occurrence of a character in invoking string with another character.
- 1-f. ----- method is used to reverse all characters? (CO3) 1
(a) reverse()
(b) reverseAll()
(c) reverseTo()
(d) None of the Above
- 1-g. If the thread is waiting in queue and is waiting for its turn to be executed, the thread is called in which state (CO4) 1
(a) runnable
(b) running
(c) waiting
(d) none of the above
- 1-h. 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-i. Arranges the components as a deck of cards such that only one component is 1

visible at a time (CO5)

- (a) BorderLayout
- (b) CardLayout
- (c) GridLayout
- (d) FlowLayout

1-j. _____ are a set of Java class libraries provided as part of Java 2 Platform, Standard Edition (J2SE) to support building graphics user interface (GUI) and graphics functionality for client applications that will run on popular platforms such as Microsoft Windows, Linux, and Mac OSX. (CO5) 1

- (a) Swing
- (b) Applet
- (c) AWT
- (d) Java Foundation Classes

2. Attempt all parts:-

- 2.a. Explain the word "Abstraction". (CO1) 2
- 2.b. What is the need for abstract classes? (CO2) 2
- 2.c. How can we create our own exception? (CO3) 2
- 2.d. Define thread group. (CO4) 2
- 2.e. Why Collection doesn't extend the Cloneable and Serializable interfaces? (CO5) 2

SECTION B

30

3. Answer any five of the following:-

- 3-a. Explain Modelling concepts. (CO1) 6
- 3-b. Explain looping statements. (CO1) 6
- 3-c. How objects are created in java ? How the members of a class can be accessed? (CO2) 6
- 3-d. Compare overloading and overriding of methods in java using proper examples. (CO2) 6
- 3.e. What is a Java package and how is it used? (CO3) 6
- 3.f. Explain User Defined Exception with example . (CO4) 6
- 3.g. Differentiate between HashMap and TreeMap. (CO5) 6

SECTION C

50

4. Answer any one of the following:-

- 4-a. Define command line arguments. Why are they important? Justify your answer 10

with suitable example. (CO1)

4-b. Differentiate between overloading and overriding (CO1) 10

5. Answer any one of the following:-

5-a. Write a program for multilevel inheritance in java. (CO2) 10

5-b. What is polymorphism and what are the advantages of Polymorphism? (CO2) 10

6. Answer any one of the following:-

6-a. There are three statements in a try block – statement1, statement2 and statement3. After that there is a catch block to catch the exceptions occurred in the try block. Assume that exception has occurred in statement2. Does statement3 get executed or not? Explain with the help of an example. (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 one of the following:-

7-a. Why do we need file handling in JAVA? What are the different file opening modes? (CO4) 10

7-b. Write a Java program to get file size in bytes, kb, mb. (CO4) 10

8. Answer any one of the following:-

8-a. How do you perform iteration over HashMap in Java? (CO5) 10

8-b. Write a JAVA program to implement mouse events. (CO5) 10