Printed Page:-Subject Code:- AMCA0201N Roll. No: NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA (An Autonomous Institute Affiliated to AKTU, Lucknow) MCA SEM: II - THEORY EXAMINATION (2021 - 2022) Subject: Object Oriented Programming with 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 marks 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 Identify the feature using which, one object can interact with another object. [CO1] 1 (a) Messaging Passing (b) Messaging Reading (c) Data Binding (d) Data Transfer 1 Which of these are selection statements in Java? [CO1] 1 (a) if() (b) for() (c) continue (d) break What is the number of parameters that a default constructor requires? [CO2] 1 1-c. (a) 0 (b) 1 (c) 2

(d) 3

| 1-d. | All Interface methods in Java are by default. [CO2] | 1 |
|------|--|---|
| | (a) public | |
| | (b) abstract | |
| | (c) public and abstract | |
| | (d) None of the above | |
| 1-e. | Which of the following package stores all the standard java classes? [CO3] | 1 |
| | (a) lang | |
| | (b) io | |
| | (c) util | |
| | (d) java.packages | |
| 1-f. | Choose a correct statement below about importing packages into a class. [CO3] | 1 |
| | (a) A Java class or interface can import any number of packages. | |
| | (b) It is advised to import only the required Classes of a package to save memory. | |
| | (c) Java packages are usually distributed in the form of JAR files. | |
| | (d) All the above | |
| 1-g. | What is the default value of priority variable MIN_PRIORITY AND MAX_PRIORITY? | 1 |
| | [CO4] | |
| | (a) 0 and 256 | |
| | (b) 0 and 1 | |
| | (c) 1 and 10 | |
| | (d) 1 and 256 | |
| 1-h. | Which method must be defined by a class implementing the java.lang.Runnable interface? | 1 |
| | [CO4] | |
| | (a) void run() | |
| | (b) public void run() | |
| | (c) public void start() | |
| | (d) void run(int priority) | |

1-i. Object which can store group of other objects is called [CO5]

1

(b) Java Object

(a) Collection Object

- (c) Package
- (d) Wrapper

1-j. Which interface does not allow duplicate elements? [CO5]

- (b) List
- (c) Map
- (d) All of the above

2. Attempt all parts:-

| 2.11 | | | | |
|---|--|----|--|--|
| 2.a. | Differentiate between an object & a class. [CO1] | 2 | | |
| 2.b. | How can we declare & initialize a two-dimensional array? [CO2] | 2 | | |
| 2.c. | Name the classes used to create strings in Java. Also, mention the interfaces which these classes implement. [CO3] | 2 | | |
| 2.d. | What are the two ways of implementing thread in java? [CO4] | 2 | | |
| 2.e. | Differentiate between a component and a container. [CO5] | 2 | | |
| | SECTION B 30 | | | |
| 3. Ai | nswer any <u>five</u> of the following:- | | | |
| 3-а. | Describe Aggregation and Composition in respect of the class diagram. [CO1] | 6 | | |
| 3-b. | Demonstrate the working of the do-while statement through example. [CO1] | 6 | | |
| 3-c. | Illustrate constructor overloading with an example. [CO2] | 6 | | |
| 3-d. | How to access elements of an array using for-each loop. [CO2] | 6 | | |
| 3.e. | Explain the exception handling mechanism in Java? [CO3] | 6 | | |
| 3.f. | Differentiate between FileReader and FileWriter. [CO4] | 6 | | |
| 3.g. | Explain the JDBC Architecture? [CO5] | 6 | | |
| | SECTION C 50 | | | |
| 4. Answer any <u>one</u> of the following:- | | | | |
| 4-a. | Describe all types of operators in Java. [CO1] | 10 | | |
| 4-b. | Distinguish between Polymorphism & Inheritance. [CO1] | 10 | | |
| 5. Answer any <u>one</u> of the following:- | | | | |
| 5-a. | Describe the role of Garbage Collector in Java. Also demonstrate the use of gc() & finalize() method. [CO2] | 10 | | |
| 5-b. | Write brief notes on : abstract() method, static() method, main() method, final() method, non | 10 | | |

static method. [CO2] 6. Answer any <u>one</u> of the following:-

Page 3 of 4

| 6-a. | Depict the internal working of try-catch block. Can we throw an exception manually? If yes, | 10 |
|------|---|----|
| | illustrate with an example. [CO3] | |

6-b. Illustrate with an example the following ways to compare Strings in Java: "By using equals() 10 method", "By using = operator", "By compareTo() method". [CO3]

7. Answer any one of the following:-

| 7-a. | Explain thread priority. Write a program to demonstrate thread priority. [CO4] | 10 |
|-----------|---|----|
| 7-b. | Write a Java program that reads a character one at a time from a file. [CO4] | 10 |
| 8. Answer | any <u>one</u> of the following:- | |
| 8-a. | Explain the generic class and generic methods? [CO5] | 10 |
| 8-b. | Write short notes on: Event Handling in java, HashMap, DriverManager Class, Generic | 10 |
| | Method. [CO5] | |