

UNIT-I

Introduction: Genesis and Evolution of Java Language, Internet & Java, Byte-code, its Features, Java Program Structure and Java's Class Library, Data Types, Variables, and Operators, Operator Precedence; Selection Statements, Scope of Variable, Iterative Statement; Defining Classes & Methods, Creating Objects of a Class, Defining and Using a Class, Automatic Garbage Collection.

Arrays and Strings: Arrays, Arrays of Characters, String Handling Using String Class, Operations on String Handling Using, String Buffer Class.

UNIT-II

Classes and Inheritance: Using Existing Classes, Class Inheritance, Choosing Base Class, Multiple Levels of Inheritance, Abstraction through Abstract Classes, Using Final Modifier.

Packages: Understanding Packages, Defining a Package, Packaging up Your Classes, Adding Classes from a Package to Your Program, Understanding CLASSPATH, Standard Packages, Access Protection in Packages.

Interface Fundamentals: Creating an Interface, Implementing an Interface, Using Interface References, Implementing Multiple Interfaces, Constants in Interfaces, Interfaces can be extended, Nested Interfaces, Final Thoughts on Interfaces.

13 | Page

UNIT-III

Exception Handling: The concept of Exceptions, Types of Exceptions, Dealing with Exceptions, Exception Objects, Defining Your Own Exceptions.

Multithreading Programming: The Java Thread Model, Understanding Threads, The Main Thread, Creating a Thread, Creating Multiple Threads, Thread Priorities, Synchronization.

Input/Output in Java: I/O Basic, Byte and Character Structures, I/O Classes, Reading Console Input Writing Console Output, Reading and Writing on Files, Random Access Files, Storing and Retrieving Objects from File, Stream Benefits.

UNIT-IV

Applets in Java: Applet Basics, Applet Architecture, Applet Life Cycle, Simple Applet Display Methods, The HTML APPLET Tag Passing Parameters to Applets.

Working with Windows: AWT Classes, Window Fundamentals, Working with Frame, Creating a Frame Window in an Applet; Displaying Information within a Window.

Working with Graphics and Text: Working with Graphics, Working with Color, Setting the Paint Mode, Working with Fonts, Managing Text Output; Using Font Metrics, Exploring Text and Graphics, Working with AWT Controls, Layout Managers and Menus.

Suggested Readings:

1. The Complete Reference JAVA, TMH Publication.
2. Beginning JAVA, Ivor Horton, WROX Public.
3. JAVA 2 UNLEASHED, Tech Media Publications.
4. JAVA 2(1.3) API Documentations.
5. Any other book(s) covering the contents of the paper in more depth.

Note: Latest and additional good books may be suggested and added from time to time.

Roll No.

67004-N

**MCA 1st Semester (MCA 2 Year
Programme) w.e.f. 2020-2021
Examination – December, 2024**

OBJECT ORIENTED PROGRAMMING USING JAVA

Paper : 20MCA21C1

Time : Three hours]

[Maximum Marks : 80

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all, selecting *one* question from each Unit. Question No. 1 is *compulsory*. All questions carry equal marks.

1. (a) What is Final keyword ? $8 \times 2 = 16$
(b) What is Object reference variable ?
(c) What is byte and character ?
(d) What is Iterator ?
(e) What is console output ?
(f) What is synchronization ?

- (g) What is Frame ?
- (h) What is thread priority ?

UNIT – I

- 2. (a) What do you mean by Java Program Structure and Java's class library ? Explain with example. 7
- (b) How Internet is play role in the Java application ? Explain with example. 5
- (c) What is Automatic Garbage College ? Explain with example. 4
- 3. Explain the following with example : $4 \times 4 = 16$
 - (a) Array
 - (b) String Buffer class
 - (c) Control statement
 - (d) Variable and Data Types

UNIT – II

- 4. (a) What is Interface ? How Interface replaced with Multiple Inheritance in Java ? Explain Nested Interface with example. 12
- (b) How is Access Specifier used in Package ? Explain with example. 4
- 5. What is Package ? What are types of Package ? Explain by taking two users define Package then import these Packages in java file. 16

UNIT – III

6. How Multithreading is main component of Java language ? What are commonly Constructors used in Multithreading ? Explain with example. 16
7. Explain the following with example : 6 + 5 + 5
- (a) Exception Handling
 - (b) I/O Basic and I/O Classes
 - (c) Stream Benefits

UNIT – IV

8. (a) What is Applet ? What basic Applet Architecture ? Explain the life cycle of Applet with example. 10
- (b) How are AWT classes used ? Explain any *three* inbuilt AWT classes. 6
9. Explain the following with example : 6 + 6 + 4
- (a) Layout managers and Menus
 - (b) AWT control and Text Output
 - (c) Window fundamentals
-

67004-N

M.C.A. 1st Semester (MCA 2 Year Programme)
w.e.f. - 2020-2021 Examination, November-2023
OBJECT ORIENTED PROGRAMMING USING JAVA
Paper-20MCA21C1

Time allowed : 3 hours]

[Maximum marks : 80

Note: *Students shall be required to attempt five questions, selecting at least one question from each unit. All questions shall carry equal marks. Question No.1 will be compulsory.*

1. (a) What is the Static variable? 8×2=16
- (b) What do you mean by Automatic Garbage Collection?
- (c) What is synchronization?
- (d) What is finally keyword?
- (e) What is the Iterative Statement?
- (f) What is Paint mode in Graphics?
- (g) What is Array?
- (h) What is Stream?

Unit-I

2. What do you mean by Genesis and Evolution of the Java Language? Explain the characteristics of Java with example.

3. (a) How StringBuffer class works? How StringBuffer class differ from String class? Explain StringBuffer and String. 8
- (b) What is Array? Explain with Example. 4
- (c) What are Operators in JAVA? Explain with example. 4

Unit-II

4. (a) How Package used in JAVA? What are the types of Package? Explain with example. 10
- (b) What is Access Protection in Package? Explain. 6
5. (a) What is Multiple Inheritance? How it is different from Interface in JAVA? Explain with example. 10
- (b) How to make an abstract class? Explain with example. 6

Unit-III

6. (a) How Exception Handling works in Java? What are the types of exceptions? Explain with example. 12
- (b) What is Random Access Files? Explain with example. 4

(3)

67004-N

7. Explain the following with example: 6+5+5
- (a) Commonly Constructors used in Multithreading
 - (b) I/O Basic and I/O Classes
 - (c) Reading and Writing on File

Unit-IV

8. Why Applet is not a pure Java component? How is Applet different from the main () method? Explain the life cycle of Applet with any four inbuilt methods. 16
9. What is Window Fundamentals? What is AWT? How AWT classes are heavyweight components? Explain AWT classes and methods with examples. 16

Unit-IV

8. What are AWT controls ? Show the diagrammatic representation of Java AWT Hierarchy. Explain its role in drawing of objects in Java. 16
9. Differentiate between the following :
- (i) GridLayout and GridBagLayout
 - (ii) Check boxes and Radio buttons 8,8

Roll No. :

Total No. of Questions : 9] [Total No. of Pages : 4

67004-N

MCA 1st Semester (Regular)

Examination, March-2022

(MCA 2 Year Programme)

(w.e.f. 2020-21)

Paper-20MCA21C1

OBJECT ORIENTED PROGRAMMING USING JAVA

Time : Three Hours]

[Maximum Marks : 80

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note :- Attempt five questions in all, selecting one question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

1. Write short answers to the following questions :

- (a) What is Java's class ?
- (b) Define Garbage.

- (c) What is the use of *package* ?
 - (d) Write syntax of an *interface*.
 - (e) What is *exception* ?
 - (f) Define a *process* w.r.t. Java ?
 - (g) Why are frames used in Java ?
 - (h) What do you understand by *font metrics* ?
- 2×8=16

Unit-I

2. What is Java Program Structure ? Explain various access modifiers used in Java giving suitable examples. 16
3. (a) Describe any four string operations used in Java by taking examples and explaining the results.
- (b) What do you understand by String Buffer Class ? How is it different from usual strings ? Explain with examples. 8,8

Unit-II

4. (a) What is CLASSPATH ? Explain its role in execution of the Java programs. How is it set from command prompt and using interface ?

- (b) What is abstract class ? How is abstraction achieved in Java ? What is the purpose of using final modifier during class definitions ? 8,8

5. (a) What is Inheritance ? Explain different types of inheritance that is possible in Java by drawing its structures and write its syntax.

- (b) What are packages ? How many types of packages are there ? Explain how packages are added and their access protection is maintained in Java classes. 8,8

Unit-III

6. (a) What is Polling ? What are the problems associated with it ?
- (b) What are Applets ? Explain the applet life cycle. 8,8
7. What is a Thread ? Explain the relation between the main() method and the main thread. Explain the process of creating multiple threads and maintaining their synchronization. 16

67004-N

**MCA 1st Semester (MCA 2 year programme)
WEF 2020-2021 Examination, December-2022
OBJECT ORIENTED PROGRAMMING USING JAVA
Paper-20MCA21C1**

Time allowed : 3 hours]

[Maximum marks : 80

Note : Students shall be required to attempt five questions, selecting at least one from each unit. All questions shall carry equal marks. Question No. 1 will be compulsory.

1.
 - (a) What is thread priority ?
 - (b) What is Object reference variable ?
 - (c) What is byte and character ?
 - (d) What is Iterator ?
 - (e) What is console output ?
 - (f) What is synchronization ?
 - (g) What is Paint Mode ?
 - (h) What is the HTML APPLET tag ? 8×2=16

Unit-I

2. What do you mean by Evolution of JAVA ? How does Java bring drastic changes to Internet ? Explain each feature of JAVA with an example. 16
3. Explain the following with example : 4×4=16
 - (a) Data Type
 - (b) String Buffer class
 - (c) Control statement
 - (d) Operators in JAVA

67004-N-P-3-Q-9(22)

[P.T.O.]

Unit-II

4. What is the difference between Multiple inheritance and Interface in Java ? Explain Multiple inheritances and Interface with examples. 16
5. (a) What is the role of Exception Handling ? Explain any five of Java's common Exceptions with example. 10
- (b) How is Access Specifier used in Package ? Explain with example. 6

Unit-III

6. What is Multithreading ? What are commonly Constructors used in Multithreading ? Explain the life cycle of Thread with a suitable example. 16
7. (a) What is Input/Output in Java ? Explain how Writing and Reading are on file with suitable examples. 8
- (b) What is Applet ? Explain the life cycle of Applet with example. 8

Unit-IV

8. (a) What are the basic Window fundamentals ? Explain with example. 5

(3)

67004-N

- (b) How are AWT classes used ? Explain any three inbuilt AWT classes. 5
 - (c) How is Applet used to create a frame window ? Explain with example. 6
9. Explain the following with example : 6+6+4
- (a) Layout managers and Menus
 - (b) AWT control and Text Output
 - (c) Exploring Text and Graphics

67004-N