GURU NANAK INSTITUTE OF TECHNOLOGY
An Autonomous Institute under MAKAUT
2022
OBJECT ORIENTED PROGRAMMING USING JAVA
EC605A

TIME ALLOTTED: 3HR   **FULL MARKS:70**

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable

GROUP – A
(Multiple Choice Type Questions)

Answer any *ten* from the following, choosing the correct alternative of each question: 10×1=10

		Marks	CO No.

1. (i) Object Oriented programming (OOP) is a programming paradigm that relies on the concept of _____ and _____?   1   CO2
   - a) Objects, Classes
   - b) Variables, Data types
   - c) Methods, Variables
   - d) None of these

   (ii) What is the correct ordering for the import, class and package declarations when found in a Java class?   1   CO3
   - a) package, import, class
   - b) class, import, package
   - c) import, package, class
   - d) package, class, import

   (iii) Which one of the following statements is wrong?   1   CO4
   - a) A base class reference can refer to an object of a derived class
   - b) The dynamic method dispatch is not carried out at the run time
   - c) The super() construct refers to the base class constructor
   - d) The super.base-class-method-name( ) format can be used only within a derived class

   (iv) What is the output of this code fragment?   1   CO2
   int x=3; int y=10;
   System.out.println (y % x);
   - a) 0
   - b) 1
   - c) 2
   - d) 3

   (v) In which memory a String is stored, when we create a string using new operator?   1   CO3
   - a) Stack
   - b) String memory
   - c) Heap memory
   - d) Random storage space

(vi) What would happen if constructors have return types?   1   CO2
   a) Compilation error
   b) Runtime error
   c) Successful Compilation and Execution
   d) Only String return type is allowed

(vii) JVM is   1   CO2
   a) platform dependent
   b) platform independent
   c) depends on machine architecture only
   d) depends on operating system only

(viii) What is the correct ordering for the import, class and package declarations where   1   CO4
   found in a single file?
   a) package, import, class
   b) import, package, class
   c) class, import, package
   d) package, class, import

(ix) Which of the following statements is not correct?   1   CO5
   a) The 'try' block should be followed by a 'catch' block
   b) The 'try' block should be followed by a 'finally' block
   c) The 'try' block should be followed by either a 'catch' block or a 'finally' block
   d) The 'try' block should be followed by at least two 'catch' blocks

(x) Which one of the following is wrong?   1   CO5
   a) 'Runnable' is a predefined interface
   b) The sleep() method instructs a thread to terminate its execution
   c) The isAlive() method tells whether a thread has not yet died
   d) MAX_PRIORITY represents the level 10

(xi) Which of the following variable declaration would NOT compile in a java   1   CO2
   program?
   a) int VAR;
   b) int var1;
   c) int var_1;
   d) int 1_var;

(xii) Casting from short to _____ data type, the result is no loss information.   1   CO4
   a) byte
   b) int
   c) long
   d) double

GROUP – B
(Short Answer Type Questions)
Answer any *three* from the following: 3×5=15

			Marks	CO No.
2.	(a)	Why Java is called Architecture neutral/platform independent language?	4	CO2
	(b)	What is 'Byte Code' in Java?	1	CO2
3.		Explain the significance of "this" keyword with the help of a simple java program.	5	CO2
4.	(a)	What is Object Oriented Programming?	2	CO1
	(b)	Explain the terms "class" and "object" w.r.t. Object Oriented Programming using suitable example.	3	CO1
5.		Explain the usage of static keyword with the help of a simple java program.	5	CO3
6.		Explain "Diamond problem" and its solution in Multiple Inheritance?	5	CO4
7.	(a)	What is Exception in Java?	2	CO5
	(b)	What is the difference between "Exception" and "Error" exception in Java?	2	CO5
	(c)	Please state the name of exception type of following code. int a[ ]=new int[5]; a[15]=56;	1	CO5

GROUP – C
(Long Answer Type Questions)
Answer any *three* from the following: 3×15=45

			Marks	CO No.
8.	(a)	What do you mean by the term Polymorphism?	2	CO2
	(b)	What is the difference between Method overloading and Constructor overloading in Java?	3	CO2
	(c)	Explain the usage of super() method with the help of a simple java program.	7	CO2
	(d)	What is the "final" and "finally" in Java?	3	CO1
9.	(a)	Explain the term "inheritance" in java.	2	CO4
	(b)	Describe different type of inheritance in Java with the help of suitable diagrams.	5	CO4
	(c)	What is Method Overriding in Java ?	2	CO4
	(d)	Explain Method Overriding with a suitable Java program.	6	CO2
10.	(a)	What is package?	1	CO4
	(b)	How can you create your own package in Java?	2	CO4
	(c)	Explain different types of "Access modifier" in java w.r.t their accessibility.	6	CO4
	(d)	Explain Dynamic method dispatch in Java with the help of a simple java program.	6	CO4
11.	(a)	What is Constructor in Java?	2	CO2
	(b)	What is the difference between Method and Constructor?	3	CO2
	(c)	Write a simple java program where you can implement both default and parameterized constructor.	5	CO2
	(d)	What is the significance of "new" operator in java?	1	CO2
	(e)	What is the usage of a) substring() and b) charAt() method in a Java program.	4	CO3

12.	(a)	What is data abstraction? Explain with a suitable example	2	CO2
	(b)	What is the difference between abstract class and interface in Java.	4	CO4
	(c)	What do you mean by the term "Thread" in Java?	1	CO5
	(d)	Explain Thread Life-Cycle in Java with a suitable diagram.	8	CO5
13.	(a)	Write a simple java program where you can implement super() method to call super class constructor.	6	CO4
	(b)	By using "static" keyword how can you access any data member and method of a particular class without instantiating the class?	6	CO2
	(c)	What is the difference between mutable and immutable strings? Explain with proper examples.	3	CO3
14.		Write short notes on any *three* of the following:		3x5=15
	(a)	Encapsulation	5	CO5
	(b)	Data Abstraction	5	CO1
	(c)	Garbage Collector	5	CO2
	(d)	Java Virtual Machine (JVM)	5	CO2
	(e)	JIT compiler	5	CO2