NARULA INSTITUTE OF TECHNOLOGY
An Autonomous Institute under MAKAUT

B.TECH./CSE/ODD/SEM 5/R_18/CS504A /2022-2023
YEAR: 2022

Object Oriented Programming Using JAVA CS504A

TIME ALLOTTED: 3 HOURS 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)

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

SL	Question	Marks	Co	Blooms Taxonomy Level
(i)	Which component is used to compile, debug and execute the java programs? (a) JRE (b) JDK (c) JVM (d) JIT	1	1	Remember
(ii)	Which keyword is used to declare an interface? (a) int (b) interface (c) Interface (a) None of the above	1	4	Remember
(iii)	Evaluate the output of the following Java code. (a) 100 (b) 400	1	2	Evaluate

```
1.  class box
2.    {
3.  int width;
4.  int height;
5.  int length;
6.    }
7.  class main
8.    {
9.  publicstaticvoid main(String args[])
10.     {
11.       box obj = new box();
12. obj.width = 10;
13. obj.height = 2;
14. obj.length = 10;
15. int y = obj.width * obj.height * obj.length;
16. System.out.print(y);
17.     }
18.   }
```

	(c) 200 (d) 12			

(iv)	Evaluate the output of the following code.
	class Main{
	public static void main(String arg[ ]){
	int Integer = 24;
	char String = 'I';
	System.out.print(Integer);
	System.out.print(String);
	}
	}
	(a) 24I
	(b) Compilation error
	(c) Throws exception
	(d) I
		1	2	Evaluate

(v)	Which one of the following statements is not correct? (a) An interface can inherit another interface. (b) The package name and subdirectory name should not be identical. (c) Only the classes declared as public in a package are accessible outside that package. (d) The import java.awt.* will not import classes in java.awt.event package.	1	4	Understanding

(vi)	class A
	{
	int a = 5;
	}
	a is _____ variable.
	(a) instance
	(b) local
	(c) class
	(d) none of these
		1	3	Understanding

(vii)	A class AP is stored within a package P1 and for instantiating class AP in the class B of package P2 (without importing P1), we should use _____ (a) P1.AP object1 = new P1.AP(); (b) AP object1 = new AP(); (c) AP object1; (d) None of these.	1	4	Apply
(viii)	Which of these functions is called to display a string as the output of an applet? (a) display() (b) paint() (c) displayApplet() (d) drawString()	1	5	Understanding
(ix)	When do Exceptions in Java arise in code sequence? (a) Run Time (b) Compilation Time (c) Can Occur Any Time (d) None of the mentioned	1	5	Understanding
(x)	Which of these keywords is not a part of exception	1	5	Remember

handling?
(a) try
(b) finally
(c) thrown
(d) catch

(xi) How can we create a thread? 1 5 Apply
(a) by extending Thread class
(b) by implementing Runnable interface
(c) both (a) and (b)
(d) none of these

(xii) Which of these methods is a part of the Abstract Window Toolkit (AWT)? 1 5 Remember
(a) display()
(b) paint()
(c) init()
(d) transient()

GROUP – B
(Short Answer Type Questions)
(Answer any three of the following) 3 x 5 = 15

	SL	Question	Marks	Co	Blooms Taxonomy Level
2.	(i)	What do you mean by method overriding?	2	4	Remember, Understanding
	(ii)	Give an example of method overriding.	2		
	(iii)	What do you mean by run-time polymorphism?	1		
3.	(i)	What are the different features of object oriented programming?	3	1	Remember
	(ii)	What are the primitive data types that are supported by JAVA?	2		
4.		Evaluate the output of the following code segment.	5	2	Evaluate, Apply

```
1. public class MyFirst{
2. public static void main(String[] args) {
3. MyFirst obj = new MyFirst(n);
4. }
5. static int a = 10;
6. static int n;
7. int b = 5;
8. int c;
9. public MyFirst(int m) {
10. System.out.println(a + ", " + b + ", " + c + ", " + n + ",
" + m);
11. }
```

```
12. // Instance Block
13.  {
14.    b = 30;
15.    n = 20;
16.  }
17. // Static Block
18. static
19. {
20.        a = 60;
21.    }
22. }
```

5.	(i)	Evaluate the following Java expression, if x=3, y=5, and z=10: **output = ++z + y - y + z + x++**	3	2	Evaluate
	(ii)	Explain the use of super keyword with suitable examples.	2		
6.		Evaluate the output of the following program.	5	3	Evaluate

```
1. publicclass Test {
2. publicstaticvoid main(String[] args) {
3. int count = 1;
4. while (count <= 15) {
5. System.out.println(count % 2 == 1 ? "***" :
"+++++");
6.    ++count;
7.        }    // end while
8.    }    // end main
9.  }
```

GROUP – C
(Long Answer Type Questions)

(Answer any three of the following) 3 x 15 = 45

SL		Question	Marks	Co	Blooms Taxonomy Level
7.	(i)	What do you mean by constructor overloading? Explain using an example.	5	3	Understanding
	(ii)	What do you mean by garbage collector in JAVA?	3		
	(iii)	How many types of inheritance are there in JAVA? Give examples of each type.	7		
8.	(i)	What do you mean by inheritance in JAVA?	2	4	Understandi

					ng, Apply
	(ii)	How many types of inheritance are there in JAVA?	5		
	(iii)	Explain the implementation of multiple inheritance in JAVA with a suitable example.	8		
9.	(i)	Explain the use of the "static" keyword to access static variables and static methods with a suitable example.	8	4	Understanding, Apply
	(ii)	What is the difference between interface and abstract class? Explain it with suitable examples.	7		
10.	(i)	Develop a program in JAVA to create a user defined package in P1 that consists of a class primeNumber. The class primeNumber consists of a method check() that will check whether a number is prime or not. Use this method in your program to print the prime numbers within the given range 10 - 55.	10	5	Develop
	(ii)	Explain the lifecycle of an Applet.	5		
11.	(i)	Explain the use of the throw keyword for handling exceptions.	5	2	Understanding, Apply
	(ii)	(a) Develop a program in java to compute the percentage of a student and print the details of the student with its secured percentage by using inheritance. Here, we have two classes, in which the class studentDetails contains the basic information (like, name, roll, year_of_admission, date_of_birth, semester etc.) about a student and another class Marks contains the marks of different subjects.	10		