

Student Regd. No

C

**COURSE CODE: DCAP501**

**COURSE TITLE: MODERN PROGRAMMING TOOLS AND TECHNIQUES I**

Time Allowed: 3 hours

Max. Marks: 80

- 1. This paper contains 10 questions divided in two parts on 02 pages.*
- 2. Part A is compulsory.*
- 3. In Part B (Questions 2 to 10), attempt any 6 questions out of 9. Attempt all parts of the questions chosen.*
- 4. The marks assigned to each question are shown at the end of each question in square brackets.*
- 5. Answer all questions in serial order.*

**Part A**

**Q1:**

- (a) What is an Applet? [2]
- (b) Java has become a popular language, so in support to this what are the advantages of Java. [2]
- (c) If you use a variable that you have not declared, what will happen if you compile the program? [2]
- (d) What is the Structure Of a java Program? Illustrate with the help of suitable example. [2]
- (e) How Java Differs from C? [2]
- (f) How do we create Instances of Objects? Give Example. [2]
- (g) What is a String Constructor? How arguments can be passed to a String Constructor? [2]
- (h) What is the purpose of using Date class available in java.util package? [2]
- (i) With the help of a program, give the example of using instance of Operator. [2]
- (j) What are different Thread Methods that are available in java? What is the purpose of using these methods. [2]

## Part B

2. Separately identify the keywords, variables, classes, methods and parameters in the following definition: [10]

```
import java.util.*;
```

```
public class test
```

```
{
```

```
    public static void main(String[] args)
```

```
    {
```

```
        Scanner stdin = new Scanner(System.in);
```

```
        System.out.print("Number:");
```

```
        double n = stdin.nextDouble();
```

```
        System.out.println(n + " * " + n + " = " + n * n);
```

```
    }
```

```
}
```

3. Define abstraction, encapsulation, modularity and hierarchy in your own terms. [10]

4. What are the major differences between an interface and a class? [10]

5. There are a wide variety of methods in the String class. Explain each of them with suitable example. [10]

6. Write an array definition that is initialized with the following values 1.4, 4.30, 5.12, 6.9, 6.21, 7.31, 11.4, 11.28 and 11.29. and display these values in reverse order. [10]

7. Since Java does not allow multiple inheritance of classes, So what construct can be used to support multiple inheritance in java and how it can be used? [10]

8. What happens when an Exception occurs in java and what are Benefits of Exception Handling Framework? [10]

9. Java provides built-in support for multithreaded programming. Explain the life cycle of a thread with a suitable diagram & program. [10]

10. Reader and Writer are the abstract parent classes for character-stream based classes in the java.io package, Demonstrate a simple example program that demonstrates how the read and write methods can be used. [10]