K. J. Somaiya College of Engineering, Mumbai-77
(Autonomous College Affiliated to University of Mumbai)
Semester: **August – November 2020**
In-Semester Examination

Class: SY B.Tech
Branch: Computer Engineering **Semester: III**
Full name of the course: Object Oriented Programming Methodology
Course Code: 2UCC304
Duration: 1hr.15 min (attempting questions) +15 min (uploading) **Max. Marks: 30**

Q. 1)	Questions	Marks
1	Multiple choice Questions. All questions are compulsory. (1M each)	Total 10 M
1.1	What is the output of this program? `class Bird { static { System.out.print("static1 "); } { System.out.print("init3 "); } public Bird() { System.out.print("Bird "); } static { System.out.print("static2 "); } } public class Falcon extends Bird { Falcon(){ System.out.print("Falcon "); } public static void main(String[] args) { System.out.print("main "); new Falcon(); } }` a) main static1 static2 init3 Bird Falcon b) main static1 static2 Falcon init3 Bird c) main static1 static2 Falcon Bird init3 d) static1 static2 main init3 Bird Falcon	1M

1.2	What is the output of this program? a) 8 b) 9 c) 10 d) 11	1M
1.3	What is the output of this program? a) [3, 2, 6] b) [3, 2, 8] c) [3, 2, 6, 8] d) [3, 2, 8, 6]	1M

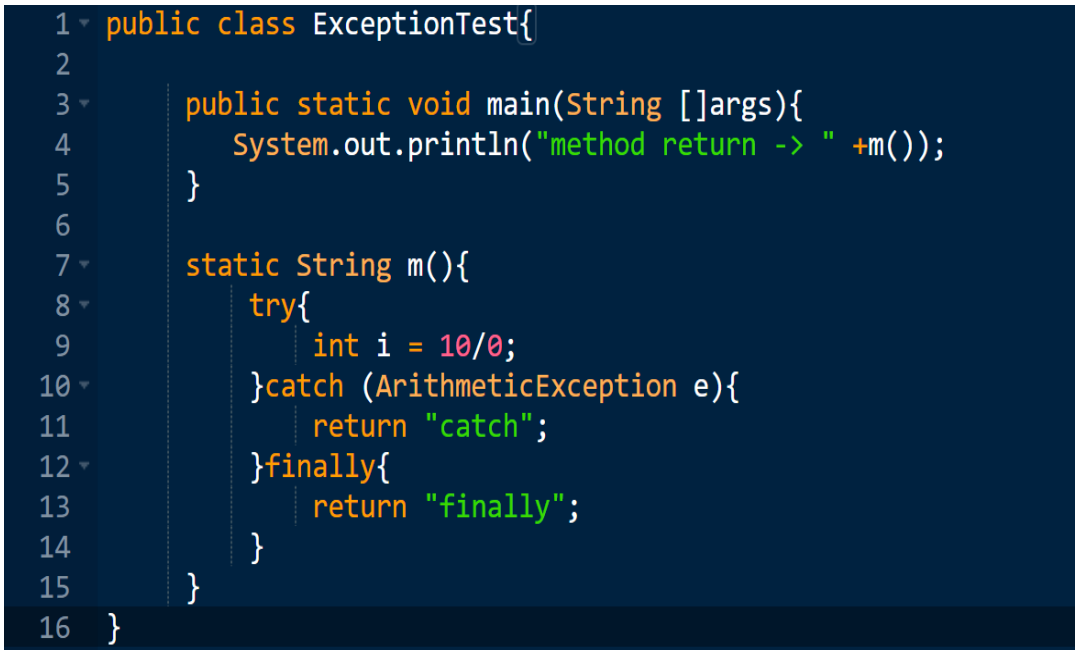
```java
public class array_output
    {
        public static void main(String args[])
        {
            int array_variable[][] = {{ 1, 2, 3}, { 4 , 5, 6}
                , { 7, 8, 9}};
            int sum = 0;
            for (int i = 0; i < 3; ++i)
                for (int j = 0; j <  3 ; ++j)
                    sum = sum + array_variable[i][j];
            System.out.print(sum / 5);
        }
    }
```

```java
import java.util.*;
    class vector
    {
        public static void main(String args[])
        {
            Vector obj = new Vector(4,2);
            obj.addElement(new Integer(3));
            obj.addElement(new Integer(2));
            obj.addElement(new Integer(6));
            obj.insertElementAt(new Integer(8), 2);
            System.out.println(obj);
        }
    }
```

1.4	What is the output of this program?
	`public class Tenor extends Singer`
	`{`
	`  public static String sing()`
	`  {`
	`  return "fa";`
	`  }`
	`  public static void main(String[] args)`
	`  {  Tenor t= new Tenor();`
	`  Singer s=new Tenor();`
	`  System.out.println(t.sing()+""+s.sing());`
	`  }`
	`}`
	`class Singer`
	`{`
	`  public static String sing()`
	`  {`
	`  return "la";`
	`  }`
	a) fa fa
	b) fa la
	c) la la
	d) Compilation fails
		1M

1.5	What is the output of this program?
	`class STRING2`
	`{`
	`  public static void main(String args[]) throws IOException`
	`  {`
	`  String s1="AMIT";`
	`  String s2="AMIT";`
	`  String s3= new String ("xyz");`
	`  String s4= new String ("xyz");`
	`  System.out.println(s1.equals(s2));`
	`  System.out.println((s1==s2));`
	`  System.out.println(s3.equals(s4));`
	`  System.out.println((s3==s4));`
	`  }`
	`}`
	a) true
	true
	true
	false
	b) false
	true
		1M

	true false c) true false true false d) true true false false	
1.6	The_____class of the_____package is used with other input streams to read the data (in bytes) more efficiently. a) InputStream, java.util b) FileInputStream, java.io c) DataInputStream, java.util d) BufferedInputStream, java.io	1M
1.7	Which of the following is true about interfaces in java: 1) An interface can contain the following type of members: public, static, final fields (i.e., constants) default and static methods with bodies 2) An instance of interface can be created. 3) A class can implement multiple interfaces. 4) Many classes can implement the same interface. a) 1, 3 and 4 b) 1, 2 and 4 c) 2, 3 and 4 d) 1, 2, 3 and 4	1M

1.8	What will be the output of the following program?  a) Runtime exception b) method return -> finally c) method return -> catch d) compile time error	1M
1.9	In a university there are different classrooms. Which of the following multiplicity relationship can exist between University and Classroom? a) 1…..1..* b) 1…..0..* c) 0..*…..1 d) 1..*….1	1M
1.10	Lock on object is obtained by a) Obtaining lock on instance variables. b) Obtaining lock on instance method. c) Obtaining lock on static method. d) Obtaining lock on static variables	1M
Q.2 (A)	What is join() method? Explain with a program.	5M
Q.2 (B)	What is the difference between Constructor and Method? (5 Points)	5M

```java
public class ExceptionTest{

    public static void main(String []args){
       System.out.println("method return -> " +m());
    }

    static String m(){
        try{
            int i = 10/0;
        }catch (ArithmeticException e){
            return "catch";
        }finally{
            return "finally";
        }
    }
}
```

Q.3)	Create a class 'Array' which stores array capacity and number of elements (of integer datatype).class Array also contains a parameterized constructor and display function. Create a Derive class Array1 which adds a function insert to insert a new value at the end of the last element of array (without checking for overflow). Create another class 'Array2' which is derived from 'Array1' which overrides the insert function. The new insert function first checks for the overflow and inserts the element only if the array is not full. Write a program using above class hierarchy which provides the following programming functionalities a) use dynamic dispatch b) the program should not allow creation of objects of class Array1 and Array **OR** A class ThreadDemo stores a thread name and an array of Strings. Constructor accepts the name of the thread and size of the array .It then creates the array with the given size and reads the elements of the array.The thread displays "thread-name starts" and then it display all the string one by one .Write a program to create two threads of the class, one of them display the days of week and the other displays the months of the years.The main thread should also display "main thread active"when it gets the timeslice.	10 M