**R20**

**SET - 1**

**II B. Tech I Semester Regular/Supplementary Examinations, January - 2023**
**OBJECT ORIENTED PROGRAMMING WITH JAVA**

(Com to CSE(AI), CSE (AI&DS), CSE( AI&ML), CSE (DS), AI&DS, AI &ML)

Time: 3 hours                                                                                   Max. Marks: 70

Answer any **FIVE** Questions, each Question from each unit
All Questions carry **Equal** Marks
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### UNIT-1

| | | | |
|---|---|---|---|
| 1 | a) | With the help of suitable example program explain the implicit conversion. | [7M] |
| | b) | Describe the various bitwise operators supported by java language. | [7M] |

OR

| | | | |
|---|---|---|---|
| 2 | a) | With the help of syntax, flow chart and example explain the while loop. | [7M] |
| | b) | Write a java program to demonstrate the break and continue statements. | [7M] |

### UNIT-II

| | | | |
|---|---|---|---|
| 3 | a) | What is meant by method overriding? Demonstrate it with suitable example program. | [7M] |
| | b) | Describe the visibility modifiers present in java language. | [7M] |

OR

| | | | |
|---|---|---|---|
| 4 | a) | In how many ways can we pass arguments to a function? Explain them in detail. | [7M] |
| | b) | Write a java program to demonstrate the copy constructor. | [7M] |

### UNIT-III

| | | | |
|---|---|---|---|
| 5 | a) | Write a java program to find the greatest number present in an array of whose size is 8. | [7M] |
| | b) | How can we implement multiple inheritance in java. Explain. | [7M] |

OR

| | | | |
|---|---|---|---|
| 6 | a) | Define an array? In what way an array variable differs from normal variable? How can we declare and initialize them?  Explain. | [7M] |
| | b) | List the advantages of Inheritance. Write a program to demonstrate the single level inheritance. | [7M] |

### UNIT-IV

| | | | |
|---|---|---|---|
| 7 | a) | Discuss in detail about the access protection with respect to packages. | [7M] |
| | b) | Differentiate between final, finally and finalize. | [7M] |

OR

| | | | |
|---|---|---|---|
| 8 | a) | Explain the following: i) Checked and Unchecked Exceptions   (ii) Throw and throws keywords | [7M] |
| | b) | Explain about Auto-boxing and auto-unboxing Java with a program. | [7M] |

### UNIT-V

| | | | |
|---|---|---|---|
| 9 | a) | Distinguish between process based and thread based multitasking. | [7M] |
| | b) | Explain isalive(), join(), sleep() and main() methods. | [7M] |

OR

| | | | |
|---|---|---|---|
| 10 | a) | In how many ways a thread can be implemented? Explain any one technique with suitable example. | [7M] |
| | b) | Explain the step by step procedure for establishing JDBC database connections. | [7M] |

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#### UNIT-I

| | | | |
|---|---|---|---|
| 1 | a) | Write about Java command line arguments and demonstrate the same with a java program. | [7M] |
| | b) | Write a java program to find individual digits of any given number. | [7M] |

OR

| | | | |
|---|---|---|---|
| 2 | a) | Distinguish between normal methods and static methods. | [7M] |
| | b) | With the help of a flowchart, syntax and example program explain the working of for loop in java. | [7M] |

#### UNIT-II

| | | | |
|---|---|---|---|
| 3 | a) | How can we access the private members of a class outside? Explain with example program. | [7M] |
| | b) | What is a constructor? List and explain the rules to define a constructor. | [7M] |

OR

| | | | |
|---|---|---|---|
| 4 | a) | What is a recursive method? In what way it differs from normal methods? Write a java program to demonstrate the same. | [7M] |
| | b) | What is a nested class? Distinguish between normal classes and nested classes. | [7M] |

#### UNIT-III

| | | | |
|---|---|---|---|
| 5 | a) | What is an interface? What is its role in java programming? Explain. | [7M] |
| | b) | Write a java program to sort the elements of an array in descending order. | [7M] |

OR

| | | | |
|---|---|---|---|
| 6 | a) | Describe the method overriding with suitable example. | [7M] |
| | b) | Write short notes on super keyword and abstract classes. | [7M] |

#### UNIT-IV

| | | | |
|---|---|---|---|
| 7 | a) | Give brief description about the wrapper classes. | [7M] |
| | b) | Write a detailed note on checked and un-checked exceptions. | [7M] |

OR

| | | | |
|---|---|---|---|
| 8 | a) | Give the syntax to create a package in Java. How to set the path and class path variables? Explain. | [7M] |
| | b) | What is the necessity to rethrow an exception in Java? Illustrate the same with a program. | [7M] |

|'"'|'|'|'|'|'||'|||

UNIT-V

9    a)   List the different ways that a thread can be implemented? Explain it by using       [7M]
          runnable interface.
     b)   Write a java program to sort the given set of strings as per the alphabetical order.       [7M]

OR

10   a)   Explain the sequence of steps for creating JDBC application.       [7M]

     b)   Discuss the Java's language level support for implementing Inter thread       [7M]
          communication.

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SET - 3

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### UNIT-I

1  a)  With the help of a example program, syntax and flowchart explain the working of do while loop in java.                                                                [7M]
   b)  Describe the various logical operators and decrement/increment operators supported by java.                                                                           [7M]

OR

2  a)  Write a java program to find the Fibonacci sequence of any given number.     [7M]
   b)  Write the syntax of 'switch' statement and explain the significance of 'break' and 'default' statements.                                                                [7M]

### UNIT-II

3  a)  Describe the constructor overloading with suitable example.                 [7M]
   b)  List and explain the various access specifies supported by java.            [7M]

OR

4  a)  Why we need static variables and methods. Explain.                          [7M]
   b)  Define a constructor? What rules to be followed to define them? Explain.    [7M]

### UNIT-III

5  a)  Write a java program to demonstrate the concept of Dynamic method dispatch and Trace the output to explain the same.                                              [7M]
   b)  Develop a Java program to perform the multiplication of two matrices after verifying the compatibility conditions.                                                [7M]

OR

6  a)  Write short notes on Interfaces, Nested interfaces and functional interfaces in Java.                                                                                 [4M]
   b)  List out and explain the advantages of Inheritance. Discuss the types of Inheritance supported by Java and explain the significance of 'Super' keyword.         [10M]

### UNIT-IV

7  a)  Explain the step by step procedure to create, import and access packages in Java. Write about any four standard Java packages.                                  [7M]
   b)  With the help of example program explain the access protection in packages.  [7M]

OR

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8  a)  What is an exception? In what an exception differs from error? Distinguish   [7M]
       between user defined and built-in exceptions.
   b)  Write short notes on i) wrapper classes   ii) Temporal adjusters class   [7M]
       iii) throws clause

### UNIT-V

9  a)  With the help of neat sketch, explain the architecture of a typical JDBC.   [7M]
   b)  List and explain the string modifying methods present in java.   [7M]

### OR

10 a)  Describe the thread synchronization in detail.   [7M]
   b)  Discuss about the race condition and dead lock.   [7M]

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## UNIT-I

1  a)  Describe about the various types of type casting in Java.                [7M]

   b)  Write a java program to find whether any given number is a palindrome or not.   [7M]

OR

2  a)  With a neat flow chart, explain the execution behaviour of various loop statements supported by Java.   [7M]

   b)  Discuss about the role of command line arguments in java language.          [7M]

## UNIT-II

3  a)  What is a class in Java? What are its members? Discuss various Access control specifiers  provided by Java to protect class members.   [7M]

   b)  Write a java program to demonstrate the operator overloading.             [7M]

OR

4  a)  Write and explain the various techniques to pass arguments to a function.  [7M]

   b)  Write a Java program to find the LCM of two numbers using Recursion.        [7M]

## UNIT-III

5  a)  How can we implement interfaces? Explain with example program.            [7M]

   b)  List the advantages of arrays over normal variables. Write a java program to find the minimum and maximum value present in an array.   [7M]

OR

6  a)  Describe the importance of super keyword in java programming.             [7M]

   b)  With the help of example program explain how to implement multiple inheritance in java.   [7M]

## UNIT-IV

7  a)  Write short notes on path and class path variables in Java, Random class and Java Lang package and its classes.   [7M]

   b)  List and explain the various keywords used in Java's exception handling mechanism.   [7M]

OR

|"'|'|'|'|'|'||'|||

8   a)   Discuss in detail about the access protection with respect to packages.   [7M]

  b)   Give brief description about the nested try classes.   [7M]

## UNIT-V

9   a)   Distinguish between multi threading and multi tasking? Explain process based multitasking in detail.   [7M]

  b)   In how many ways we can define a string in Java. Develop a java program to extract a set of characters from given string.   [7M]

## OR

10   a)   Discuss in detail about the thread priority and synchronization.   [7M]

  b)   Describe the string buffer class in detail.