



R20 Regulation

Subject code: 3P3HA

# TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

## B.Tech III Semester Supplementary Examinations, December 2024

### INTRODUCTION TO OBJECT ORIENTED PROGRAMMING & DATA STRUCTURES USING JAVA (CSE(DS))

Maximum Marks: 70

Date:02.12.2024

Duration: 3 hours

- Note:
1. This question paper contains two parts A and B.
  2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
  3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
  4. Each question carries 10 marks and may have a, b, c, d as sub questions.

#### Part-A

All the following questions carry equal marks (10X2M=20) Marks)		CO	Bloom Tx
1	What is Object Oriented Programming? How it is different from Procedural concepts?	1	L1
2	How to declare and initialize variables in java.	1	L1
3	What is abstract class?	2	L1
4	What is meant by interface?	2	L1
5	What are the types of Exceptions.	3	L1
6	Write the usage of try and catch?	3	L1
7	What is searching? Mention the types of searching.	4	L1
8	Disadvantages of Linked List over Array.	4	L1
9	How do you test for an empty queue?	5	L1
10	What is the benefit of Iterator in Collections Framework?	5	L1

#### Part-B

Answer All the following questions. (5X10M=50Marks)		CO	Bloom Tx
11	A. Discuss five methods in String class with suitable example. [5M] B. Define methods and classes in JAVA with example. [5M]	1	L3 L2
OR			
12	A. Distinguish between Byte Stream Classes and Character Stream Classes. [5M] B. What is an array? How do you declare and initialize arrays in java? Give example. [5M]	1	L2
13	A. What is Inheritance? Explain different types of inheritance supported by java with example? [5M] B. Write a Java program to check whether a given number is palindrome or not? [5M]	2	L2 L4
OR			
14	A. How to extend one interface by the other interface? Explain with an example. [5M] B. What is the major difference between an interface and class? [5M]	2	L3 L2

15	Write a Java program to implement ArrayIndexOutOfBoundsException using exception handling. [10M]	3	L3
OR			
16	Write a Java program to implement Factorial of a number using recursion. [10M]	3	L3
17	Explain possible operations in Singly Linked List implementation using Arrays. [10M]	4	L2
OR			
18	Explain the operations of doubly linked lists. [10M]	4	L2
19	Explain the implementation of the ArrayList (bounded capacity) with Code Fragment. [10M]	5	L3
OR			
20	A. Discuss the Java Collections Framework. [5M] B. Give code fragment for List interface. [5M]	5	L2 L3