



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 2025

**Introduction to Object Oriented Programming and Data Structures using JAVA
(CSE(DS))**

Maximum Marks: 70

Date: 15.12.2025

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.
 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)		Marks	CO	BTL
1	List the features of object-oriented programming.	2M	1	L1
2	What is meant by byte code?	2M	1	L1
3	What is a Constructor?	2M	2	L1
4	List types of Polymorphism in JAVA.	2M	2	L1
5	Write the usage of try and catch.	2M	3	L1
6	What is the difference between error and an exception?	2M	3	L1
7	Differentiate sorting and searching.	2M	4	L1
8	When singly linked list can be represented as circular linkedlist?	2M	4	L1
9	How do you test for an empty queue?	2M	5	L1
10	What is the benefit of Iterator in Collections Framework?	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	a) What is the purpose of constructor in Java programming and explain it with suitable example?	5M	1	L2
	b) Describe the structure of a typical Java program with an example.	5M		
OR				
12	a) Briefly explain about various Stream Classes in JAVA.	5M	1	L2
	b) Write a JAVA program to read a character from user by using BufferedReader class.	5M		
13	Give an example program how multiple inheritance can be implemented in JAVA.	10M	2	L2
OR				
14	Describe the process of importing and accessing a package with suitable examples.	10M	2	L2
15	a) Write a program with nested try statements for handling exception.	5M	3	L2
	b) How to create a user defined exception.	5M		
OR				

16	What are the applications of recursion and explain any application with suitable program.	10M	3	L2
17	Explain about Linear search with an example program.	10M	4	L2
OR				
18	Write and explain algorithm to insert element at the beginning of circular linked list.	10M	4	L2
19	Write and explain algorithm to insert element at a particular position of singly linked list.	10M	5	L2
OR				
20	Discuss the Java Collections Framework.	10M	5	L2