



R22 Regulation

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

Subject code: 4E2AR

B.Tech II Semester Regular Examinations, September 2023

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

Maximum Marks: 60

Date:20.09.2023 Duration: 3 hours

- Note:
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 10 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

(10x1M=10 Marks)

1. a List string manipulation functions of Java String class.
b Define java byte code.
c What is the significance of the CLASSPATH environment variable in creating/using a package?
d What is use of final, super keywords in java?
e Define Exception.
f How do we set priorities for threads?
g What is a data structure?
h What is the need for the header in List?
i Define stack.
j Define list and iterator.

Part-B

Answer All the following questions.

(5X10M=50Marks)

- 2 How to assign the values to the variables in the class at the time of creation of object to that class? Explain with example. [10]
OR
- 3 a. Write and explain the syntax of constructor with example. [5]
b. What is an array? How do you declare the array in java? Give examples. [5]
- 4 Write a program to implement a class Teacher contains two fields Name and Qualification. Extend the class to Department, it contains Dept. No and Dept. Name. An Interface named as College it contains one field Name of the College. Using the above classes and Interface get the appropriate information and display it. [10]
OR
- 5 Write a program to demonstrate hierarchical and multiple inheritance using interfaces. [10]
- 6 a. Explain an example of exception handling in the case of division by zero. [5]
b. Define throw keyword. Explain with an example program. [5]

OR

7 Explain recursion. Write a recursive algorithm to calculate factorial of a Number analyse complexity of algorithm. [10]

8 Write a JAVA program to sort a list using insertion sort. [10]

OR

9 What is queue? Why it is known as FIFO? Write an algorithm to insert and delete an element from a simple queue? [10]

10 a. Explain array based implementation of queues. [5]

b. Explain queue and its operations. [5]

OR

11 Explain in detail about JAVA collection framework architecture with any example program. [10]