



B.Tech III Semester Regular Examinations, February 2022

Introduction to Object-Oriented Programming & Data Structures using Java
(CSE(DS))

Maximum Marks: 70

Date: 21.02.2022 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)

- 1 What is the size of char data type? Why does it differ from C
- 2 list the types of operators used in java
- 3 Differentiate between interface and Abstract Class.
- 4 What is the significance of the Class path environment variable in creating/using a package
- 5 Explain how multiple catch statements work.
- 6 What is the difference between error and an exception?
- 7 Draw the binary search tree for the following: 40, 67, 71, 33, 91, 56, 22, 32
- 8 Write a short note on doubly linked list
- 9 Discuss various applications of stack
- 10 What is Deque?

Part-B

Answer All the following questions.

(5X10M=50Marks)

- 11 a) List and explain the primitive data types available in Java. [5]
b) Write a program to convert the temperature in Fahrenheit to centigrade. [5]
OR
- 12 a) How do we implement polymorphism in JAVA? Explain briefly. [5]
b) What is an array? How do you declare the array in java? Give examples. [5]
- 13 a) What is the accessibility of a public method or field inside a non-public class or interface? Explain. [5]
b) What are the three uses of final keyword? Explain with example. [5]
OR
- 14 a) What is package? How do you create a package with suitable examples? [5]
b) Discuss the different levels of access protection available in Java. [5]

15 Explain and analyze linear and binary recursion with an example. [10]

OR

16 a) Differentiate between checked and unchecked exceptions with examples. [5]
b) What are the different ways to handle exceptions? Explain. [5]

17 a) Differentiate between doubly and circular linked lists. [5]
b) What are the advantages and disadvantages of singly linked list? Explain. [5]

OR

18 Write an algorithm for creating a singly linked list and perform the insertion and deletion operations on it. [10]

19 a) Write a Program to pop an element from a stack? [5]
b) Define Queue and also write the code snippets to check the queue overflow condition. [5]

OR

20 a) Discuss about the Polynomial Addition using Array ADT? [5]
b) Write a Program to push an element into a stack? [5]