



R22 Regulation

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY
(Autonomous, Accredited by NAAC with 'A+' Grade)

Subject code: 4E2AR

B.Tech II Semester Regular/Supplementary Examinations, June 2024

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

Maximum Marks: 60

Date: 28.06.2024 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.
 4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A			CO	Bloom Tx
All the following questions carry equal marks (10x1M=10 Marks)				
1.a	Differentiate static variable and instance variable.		1	L2
b	List the various iteration statements.		1	L1
c	What is CLASSPATH?		2	L1
d	Give the general form of a class that implements interface.		2	L1
e	Write difference between throw and throws?		3	L2
f	What happens if exceptions are not provided by the user?		3	L1
g	What are the factors to be considered during the selection of a sorting technique?		4	L1
h	Give any two advantageous of linked list over arrays		4	L1
i	What are the operations performed on stack?		5	L1
j	How drawbacks of linear queues overcome in circular queues?		5	L3
Part-B				Bloom Tx level
Answer All the following questions. (5X10M=50Marks)				
2	a	Explain the structure of Java with an example program. [6M]	1	L3
	b	Develop a java program that reads five integers and to print the count of negative numbers, positive numbers and zero's inputted. [4M]	1	L4
OR				
3	a	What is the purpose of a method? How do you declare and invoke a method. [5M]	1	L3
	b	How to define a class and write a program to access members of class through object with suitable example. [5M]	1	L3
4	a	Explain about packages with an example program. [5M]	2	L2
	b	What is the purpose of constructor in java programming? Explain different types of constructors with suitable examples [5M]	2	L2
OR				

5	a	Write an abstract class called shape consists of area and perimeter methods? Define subclasses named circle, triangle, and rectangle to shape class. Define a class square to rectangle. Write a test program that create an object of circle, triangle, rectangle and square and print the corresponding area and perimeters of the objects. [5M]	2	L3
	b	“Java indirectly supports multiple inheritance”. Justify it and also give suitable Java program. [5M]	2	L5
6	a	Write a program to catch divide by zero and array out of bounds exceptions. [5M]	3	L3
	b	Explain final keyword and illustrate uses of ‘final’ keyword with inheritance with suitable code segments. [5M]	3	L2
OR				
7	a	Write a program to illustrate the use of multiple catch blocks for a try block. [5M]	3	L3
	b	Write a java program to handle arithmetic exception using try-catch block. [5M]	3	L3
8	a	Consider the following list of integers: [1,9,33,47,5,6,7,80,9,10] and write the procedure for finding the element ‘7’ using binary search. [10M]	4	L3
OR				
9	a	Explain the following deletion operations in doubly linked list i) Deletion at the beginning ii) Deletion at the end iii) Deletion at a specified location [5M]	4	L2
	b	Write a program to implement bubble sort algorithm for following list 12, 11, 13, 5, 6, 7, 22, 8 [5M]	4	L3
10	a	Consider the stack of elements = {4,6,2,1,5}. Check the status of stack after performing the following operations i)Push(8),Push(7),Push(3) ii) Pop(),Pop(),PoP() [5M]	5	L4
	b	Explain the basic operations on queue. Elaborate applications of queue with example. [5M]	5	L2
OR				
11		Explain about Java collection frame works with an example. [10M]	5	L3