

THE KAVERY ENGINEERING COLLEGE
(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV /DEC 2024

Third Semester

Electrical and Electronics and Engineering

CS3353 -C Programming and Data Structures

(Common to Electronics and Communication Engineering)

Regulations - 2021

Duration : 3 Hrs

Maximum: 100 Marks

PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	What is meant by a data type? List out the classifications.	RE	1	2
2.	What is the difference between for and while statement?	EV	1	2
3.	Define the term structures in C and write down the syntax	UN	2	2
4.	How the members of union object is accessed?	UN	2	2
5.	What is double ended queue?	RE	3	2
6.	Examine a doubly linked list with neat diagram.	AP	3	2
7.	Differentiate AVL tree and binary search tree.	AN	4	2
8.	Simulate the result of inserting 2, 1, 4, 5, 9 into an initially empty AVL Tree.	AN	4	2
9.	Classify the different sorting methods.	AP	5	2
10.	Develop an algorithm for a bubble sort.	AP	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*13 = 65)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a i Develop a C program for the following: To check whether a number is prime or not.	AP	1	7
	ii Develop a C program to convert the temperature given in Fahrenheit to Celsius.	AP	1	6
	Or			
b i	Implement a C program to find the reverse of an integer number and check whether it is palindrome or not.	AP	1	8
	ii Show how break and continue statements are used in a C program, with example.	AP	1	5
12.	a i Explain about the structures and its operations.	UN	2	7
	ii Write short note on structure declaration.	RE	2	6
	Or			
b i	Write a C program to pass structure variable as function argument.	AP	2	7
	ii What is pointer? give the advantages and disadvantages of pointer data type.	UN	2	6

13.	a	Analyze and write procedure for circular linked list with create, insert, delete, display operations.	AN	3	13
		Or			
	b	What are priority queues? Explain the types of priority queue with a suitable example.	UN	3	13
14.	a	Discuss in detail the various methods in which a binary tree can be represented. Discuss the advantage and disadvantage of each method.	UN	4	13
		Or			
	b	Discuss in detail about preorder, inorder and postorder traversal of a binary tree.	UN	4	13
15.	a i	Explain bubble sort. Sort the following numbers using bubble sort 35,12,14,9,15,45,32,95,40,5	AP	5	8
	ii	Demonstrate the insertion sort for the following data: 2, 1, 3, 1, 4, 9, 2, 6, 4.	AP	5	5
		Or			
	b	Demonstrate quick sort for the following data: 77,11,22,33,66,99,32,67,54,10.	AP	5	13

*PART – C (Marks 1*15 = 15)*

<i>Q.No</i>		<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
16.	a i	Write the various Input and output statements used in C with example.	AN	1	10
	ii	Write a C program to find the sum of all odd / even numbers between 1 and 50.	AN	1	5
		Or			
	b	Write importance of the following loop control statements with example. (i). The break statement (5) (ii). The continue statement (5) (iii). The goto statement (5)	AN	1	15