

Reg. No. :

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**Question Paper Code: U3827**

B.E./B.Tech. DEGREE EXAMINATION, NOV 2024

Third Semester

Electrical and Electronics Engineering

21UIT327– DATA STRUCTURE USING C

(Regulation 2021)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Write and explain syntax of for loop. CO2-App
2. Write a program to print the multiplication table from 1 to n. CO2-App
3. What is difference between Union and Structure? CO1- U
4. What is dynamic memory allocation in C? CO1- U
5. What is structure in C with example? CO1- U
6. What is array? Explain the memory representation of array with suitable example. CO1- U
7. What is difference between Union and Structure? CO1- U
8. What is dynamic memory allocation in C? CO1- U
9. What is the worst case and best case numbers of comparisons in linear search? CO1- U
10. Differentiate Internal sorting with external sorting. CO1- U

PART – B (5 x 16= 80 Marks)

11. (a) Write a C program to find the largest and smallest element in an Array. CO2- App (16)  
Or  
(b) Write a C program to find the given number is ODD or EVEN and explain the for looping statement in C with example program. CO2- App (16)

12. (a) Write a C program to count total number of positive and negative elements in an array? CO2- App (16)
- Or
- (b) Write a C program to find the given number is ODD or EVEN and explain the for looping statement in C with example program. CO2- App (16)
13. (a) Analyze any 4 operations of the Singly linked list with Routines and examples. CO3- Ana (16)
- Or
- (b) Analyze doubly linked list and circular linked list with examples. Mention its advantages and disadvantages. CO3- Ana (16)
14. (a) Write the Graph traversal algorithm for BFS and DFS algorithm for the g tree with any example. CO2- App (16)
- Or
- (b) Write the Graph representation of matrix Direct, Undirect graph and adjacency list with any example CO2- App (16)
15. (a) Write an algorithm to sort a set of 'N' numbers using quick sort. Demonstrate the algorithm for the following set of numbers:  
88, 11, 22, 44, 66, 99, 32, 67, 54, 10. CO2- App (16)
- Or
- (b) Write an algorithm to implement Selection sort with Given example.  
13,16,11,18,14,15 CO2- App (16)