

Question Bank (G scheme)

Name of subject: Data Structure Using 'C'

Unit Test :I

Subject code:17330

Course : CM/IF

Semester: III

CHAPTER-1 INTRODUCTION TO DATA STRUCTURE (08)

3 Marks

1. Describe big 'O' notation used in algorithm.
2. Explain different approaches to design an algorithm.
3. State different types of data types.

4 Marks

4. What is data structure? Why do we need data structure?
5. Define primitive data structure. Give 4 operations of data structure.
6. Define Data Structure? Enlist any two types of non-linear data structures along with example.
7. Explain time and space complexity of an algorithm.
8. Give classification of Data Structure.

CHAPTER-2 SORTING AND SEARCHING (16)

3 Marks

9. Write a program to implement linear search.
10. Differentiate between linear and binary search.

4 Marks

11. Write a program to implement bubble sort.
12. Write a program to implement selection sort.
13. Differentiate between linear and binary search.
14. Find the position of element 29 using binary search method in array.

$A=\{2,3,5,11,17,21,29,43\}$

15. Arrange the given elements in ascending order using radix sort.
 $A=361,12,527,143,9,768,348$
16. Arrange the given elements in the ascending order using merge sort.

$A=15,84,62,08,41,47,33,18,51,32$

17. Arrange the given elements in the ascending order in quick sort.

$A=3,12,5,19,1,17$

18.. Arrange the given elements in the ascending order using insertion sort.

A=77,33,44,11,88,22,66,55

CHAPTER-3 STACKS (18)

3 Marks

19. Define the term 'overflow' and 'underflow' with respect to stack.
20. Write an algorithm for 'push' operation.
21. What is a recursion?

4 Marks

22. State the principle of stack with basic operations
23. Translate the given infix expression to postfix expression using stack.

$((A+B)*D)^{(E-F)}$

24. Evaluate following postfix expression.

A: 6,2,3,+,-,3,8,2,/,+,* ,2,^,3,+

25. Write a program to find the factorial of a given number using recursion.
26. Convert following expression into prefix expression.

$(A+B)*C-D/E*(F/G)$