16U420 (Pages: 2) Name: ……

Reg. No……..

FOURTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2019

(CUCBCSS-UG)

CC17U CSC4 C04 – DATA STRUCTURE USING C PROGRAMMING

Computer Science – Complementary Course

(2017 Admissions Regular)

Time: Three Hours Maximum: 64 Marks

PART A

Answer ***all*** questions. Each question carries 1 mark.

1. Define array.
2. In stack ---------- function is used to insert element into it.
3. Define Deque.
4. ---------- is the computational complexity that measures the time taken for running an algorithm.
5. The time complexity of selection sort is ----------
6. Pivot element is used in ---------- type of sorting.
7. What do you mean by space complexity.
8. What is a Data Structure?
9. Prefix notation is also known as ----------

(9 x 1 = 9 Marks)

PART B

Answer ***all*** questions. Each question carries 2 marks.

10. What are the characteristics of data structure?
11. What is circular linked list?
12. Explain the concept of binary search.
13. What are the various operations that can be performed on different Data Structures?
14. What are the advantages of linked list over array?

(5 x 2 = 10 Marks)

PART C

Answer any ***five*** questions. Each question carries 5 marks.

15. Explain 1 D and 2 D arrays with example.
16. Explain the concept of priority queue.
17. What is a stack? Where it can be used?
18. What are Infix, prefix, Postfix notations?

19. Write a program for sorting numbers using bubble sort technique.

20. Differentiate between linear search and binary search.

21. Explain how PUSH and POP operations are performed on a stack.

22. What is a Linked List and what are its types?

(5 x 5 = 25 Marks)

PART D

Answer any ***two*** questions. Each question carries 10 marks.

23. Explain the concept of deletion and inserting operation in a queue.

24. What is a sparse matrix? Explain different ways to represent sparse matrix.

25. Explain quick sort and merge with example.

(2 x 10 = 20 Marks)

****