K20U 1934

Reg. No. : .....

Name : .....

III Semester B.C.A. Degree CBCSS (OBE) – Regular Examination, November 2020
(2019 Admission Only)
GENERAL AWARENESS COURSE
3A12BCA : Data Structures

Time : 3 Hours Max. Marks : 40

PART – A
(Short Answer)

Answer **all** questions. (6×1=6)

1. Define complexity of an algorithm.
2. What is the time complexity of a selection sort ?
3. What is FIFO ?
4. Define linked list.
5. Define tree.
6. What is the maximum number of nodes of a complete binary tree ?

PART – B
(Short Essay)

Answer **any 6** questions. (6×2=12)

7. Write down the operations of a data structure.
8. What is Deque ?
9. What is a doubly linked list ?
10. Write down the linked representation of a binary tree.
11. Write an algorithm for in order traversal of a tree.
12. Explain Huffman Code.
13. What is a stack ?
14. How to represent a polynomial with an array ?

P.T.O.

PART – C
(Essay)

Answer **any 4** questions. (4×3=12)

15. Write down the algorithm for Tower or Hanoi.

16. Write an algorithm for bubble sort.

17. Convert the following expression into postfix and prefix : P – Q / R – S + T * U.

18. Evaluate the following expression using algorithm : S = 5 + 6 / 3 – 4 + 7 * 2.

19. What is the advantage of circular linked list ? Explain with example.

20. Write down the memory representation of an array.

PART – D
(Long Essay)

Answer **any 2** questions. (2×5=10)

21. What is recursion ? Explain any two applications.

22. Compare quick sort and insertion sort.

23. What are the operations of a stack ? Explain.

24. Write an algorithm for insertion and deletion of an element of a linked list.