(Pages : 3)

R – 3458

Reg. No. : .....

Name : .....

Second Semester B.C.A. Degree Examination, September 2023

Career Related First Degree Programme Under CBCSS

Group2(b)–Computer Applications

Core Course

CP 1243 : DATA STRUCTURES IN C

(2021 Admission Onwards)

Time : 3 Hours

Max. Marks : 80

SECTION – A

(Very Short Answer questions)

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

1. What do you mean by linear data structures?
2. What do you mean by linked list?
3. What is a graph?
4. Convert following equation from infix to prefix form A * B + C / D-(E/F)
5. What is a priority queue?
6. What do you mean by LIFO data structure?
7. Define undirected graph?
8. What do you mean by hashing?

P.T.O.

9. Name two non linear data structures.

10. What are the features of complete binary tree?

(10 × 1 = 10 Marks)

SECTION – B

(Brief Answer questions)

Answer **any eight** questions. **Each** question carries **2** marks.

11. Compare array vs linked list.

12. What are the various types of tree?

13. Write note on complete binary tree.

14. What do you mean by hash table?

15. Explain expression tree with example.

16. Explain memory representation for binary tree?

17. Write note on any two hashing techniques.

18. Write notes on circular linked list.

19. What do you mean by underflow condition?

20. What is the difference between space and time complexity?

21. Explain applications of graph.

22. What is post order tree traversal?

(8 × 2 = 16 Marks)

SECTION – C

(Short Essay Type questions)

Answer **any six** questions. **Each** question carries **4** marks.

23. Explain search operation in array.
24. Write short note on doubly linked list.
25. Explain applications of stack in detail.
26. Explain preorder and post order tree traversal.
27. Write short note on binary search tree.
28. Explain the various types of linked list.
29. Explain insertion sort with example.
30. Write short note on representation of multi dimensional array.
31. Write short note deletion of a node from a binary tree.

(6 × 4 = 24 Marks)

SECTION – D

(Long Essays)

Answer **any two** questions. **Each** question carries **15** marks.

32. Explain various types of queues.
33. Explain various linear linked list operations.
34. Explain graph traversal.
35. Explain selection sort in detail with example.

(2 × 15 = 30 Marks)