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J – 2936

Reg. No. :

Name :

Second Semester B.C.A. Degree Examination, May 2020

Career Related First Degree Programme Under CBCSS

Group 2(b) – Computer Applications

CP 1243 — DATA STRUCTURES

(2018 Admission Onwards)

Time : 3 Hours

Max. Marks : 80

SECTION – A

Answer **all** questions, **each** question carries **1** mark.

1. What is data structure?
2. What is hashing?
3. What is rear in queue?
4. The process of arranging data in some logical order is known as _____.
5. What is a graph?
6. What is a leaf node?
7. What are expression trees?
8. What is overflow in a stack?

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9. What is an array?
10. What is a dynamic data structure?

(10 × 1 = 10 Marks)

SECTION – B

Answer any **eight** questions, **each** question carries **2** marks.

11. ✓ Explain polish notation. ✓
12. ✓ What are the main advantages of circular linked list? ✓
13. ✓ Explain sequential search technique. ✓
14. ✓ What is hash function? ✓
15. ✓ Write a note on hash table searching. ✓
16. How can you insert a node into a binary tree?
17. ✓ How can you implement linked list using pointers?
18. ✓ What is bubble sort? ✓
19. ✓ Explain the data structure stack. ✓
20. How can you represent graph in memory?
21. Discuss the applications of tree data structures.
22. ✓ Differentiate FIFO and LIFO data structures. ✓

(8 × 2 = 16 Marks)

SECTION – C

Answer any **six** questions, **each** question carries **4** marks.

23. ✓ Consider the following array. How will you search 21 using Binary search? Explain.

12 21 33 45 78 99 100

24. Discuss the implementation of queue using array.
25. Differentiate push() and pop() operation on stack.
26. How can you create a binary search tree?
27. Explain memory allocation of linked list.
28. Compare linear and non-linear data structures.
29. Describe the linked list implementation of stack.
30. Explain the applications of graph data structure.
31. What is circular Linked List?

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions, **each** question carries **15** marks.

32. Explain about organization and operations on queue.
33. Discuss different graph traversal methods with example.
34. Define a binary tree. Explain tree traversal techniques.
35. What is linked list? What are the different types of linked list? Explain singly linked list.

(2 × 15 = 30 Marks)