17U332 (Pages: 2) Name: ……

Reg. No……

THIRD SEMESTER B.C.A. DEGREE EXAMINATION, NOVEMBER 2018

(CUCBCSS-UG)

CC17U BCA3 B04 - DATA STRUCTURES USING C

(Computer Applications - Core Course)

(2017 Admission Regular)

Time: Three Hours Maximum: 80 Marks

SECTION A

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

1. The matrix with value of maximum elements as zero is called ……
2. Define data structures.
3. What is syntax to define a node using structure in C++.
4. Define hashing.
5. …… is prefix form of A*B+C.
6. The complexity of selection sort algorithm is ……
7. When is a binary search best applied?
8. Define unweighted graph.
9. An application of queue is ……
10. ……traversal of BST returns its elements in sorted order(ascending).

(10 x 1 = 10 Marks)

SECTION B

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

11. What do you mean by a Big O notation?
12. What are the features of a linked list?
13. What do you mean by recursion?
14. What is the difference between a linear and nonlinear data structure?
15. Explain with example, how to perform evaluation of postfix expression.
16. Write any two application of stack.
17. Define a queue. How it is different from stack?
18. How to find height of a tree?

(8 x 2 = 16 Marks)

SECTION C

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

19. Write the difference between breadth first search and depth first search.
20. Convert following arithmetic expressions to prefix and postfix form.
    a) A+(B*C)/D*E/F
    b) A*B-C*(D-E)/F-G/H
21. Explain insertion sorting technique with suitable example.
22. Write short note on time complexity.
23. Describe the features of a binary tree.
24. Write about the insertion of a value to a linear linked list.
25. Enumerate the features of sparse matrix.
26. Give the pattern matching algorithm with a suitable example.
27. Explain Various types of linked list.

(6 x 4 = 24 Marks)

SECTION D

Answer any ***three*** questions. Each question carries 8 marks.

28. Describe with suitable example and algorithm quick sorting technique
29. Explain various graph traversal methods.
30. Write about the various stack operations. Implement them using array.
31. Elaborate on the insertion and deletion operations to a circular queue with suitable example and C function.
32. With suitable example describe how to perform binary searching.

(3 x 10 = 30 Marks)

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