D 92925   (Pages : 2)   Name.....................................

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THIRD SEMESTER (CBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2020

Computer Science

BCS 3B 04—DATA STRUCTURES USING C

Time : Two Hours   Maximum : 60 Marks

Section A (Short Answer Type Questions)

Answer at least **eight** *questions.*
Each question carries 3 marks.
All questions can be attended.
Overall Ceiling 24.

1. What are non-linear data structures ? Example.

2. What is "substring" operator in string manipulation ?

3. What are arrays ? Layout its memory allocation strategy.

4. What is the basic structure of a linked list ?

5. Explain the features of a circular linked list.

6. Write the algorithm for PUSH operation in a stack.

7. Explain the terms : Queue full and queue empty.

8. Explain the procedure to delete a node from a linear queue.

9. What is depth of a tree ? Example.

10. Explain post order tree traversal method.

11. What is weighted graph ?

12. What is linear hashing ?

                                                             (8 × 3 = 24 marks)

Section B (Short Essay Type Questions)

Answer at least **five** *questions.*
Each question carries 5 marks.
All questions can be attended.
Overall Ceiling 25.

13. What are the various string storage structures ? Explain.

14. What are three dimensional arrays ? Explain its memory representation.

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15. What are the limitations of an array ? Explain the advantages of linked list with example.

16. What are linked stacks ? Explain.

17. Explain various applications of a queue with suitable example.

18. Develop the procedure to insert a node in a binary tree.

19. What are search procedures ? Explain the binary search procedure.

(5 × 5 = 25 marks)

Section C (Essay Type Questions)

Answer any **one** *question.*
The question carries 11 *marks.*

20. What are circular queues ? Explain the implementation of circular queues with appropriate algorithms.

21. What is sorting ? Explain the exchange sort procedure with example.

(1 × 11 = 11 marks)