B.Sc./3rd Sem (H)/COMP/23(CBCS)

2023

3rd Semester Examination

COMPUTER SCIENCE (Honours)

Paper : C 5-T

[Data Structures]

[CBCS]

Full Marks : 40 Time : Two Hours

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.

Group - A

Answer any *five* questions : 2×5=10

1. What are non-recursive procedures?
2. What are advantages of insertion sort?
3. State the principle of stack and give it's two applications.
4. What are the front and rear pointers of queue?
5. What is the need of Garbage collection?
6. How a heap can be created?

P.T.O.

7. How a binary tree can be represented as array structure?

8. What is traversal method of a threaded binary tree?

Group - B

Answer any ***four*** questions : 5×4=20

9. Explain the Bubble sorting algorithm.

10. Explain Row major implementation and column major implementation of an array.

11. Write an algorithm to evaluate a postfix expression using stack.

12. Discuss the technique of Binary search algorithm with suitable example.

13. Write an algorithm to delete any element from any position of link list.

14. Write an algorithm for post order traversal in tree.

Group - C

Answer any ***one*** question : 10×1=10

15. What is data structure? Write down the application of Data Structure. Write an algorithm for POP and PUSH operation of stack data structure. 2+2+6

16. What is the Binary Search Tree (BST)? What is the complete binary tree? Construct BST tree for the following data 21, 26, 30, 9, 4, 14, 28, 18, 15, 10, 2, 3, 7. 2+2+6
