

Tribhuvan University
Institute of Science and Technology
2069

Bachelor Level/ First Year/ Second Semester/ Science
Computer Science and Information Technology (CSc. 154)
(Data Structure and Algorithm)

Full Marks:60
PassMark:24

Time: 3 hours.

Section A

Attempt any TWO questions: (10x2=20)

1. Define Queue as ADT. Describe its primitive operation on array implementation and linked list implementation.
2. Describe the significance of Huffman tree. Describe procedure for construction of a Huffman tree. Illustrate it with example. Describe different types of applications of Binary trees.
3. Explain the algorithms for infix to postfix conversion and evaluation of postfix expression. Trace the algorithms with suitable example.

Section (B)

Attempt any eight questions:

4. State TOH problem. Write recursion tree when no. of disks are four.
5. Write about applications of Binary trees.
6. Compare partition strategies of Merge sort and Quick sort.
7. Explain Bubble sort algorithm. Illustrate it with an example.
8. How do you insert a nodes at last in doubly linked list? Explain.
9. Describe recursive procedure of Binary searching technique? Discuss about efficiency of Binary searching.
10. What are Hashing and collision? Write about any three hashing algorithms.
11. What is Big 'O' notation? Analyze any one sorting algorithm.
12. Describe strong and weakly connected graphs with examples. What is weighted graph?
13. State relative merits & demerits of contiguous list and linked list.

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