Tribhuwan University
Institute of Science and Technology
2072

Bachelor Level / third-semester / Science — Full marks: 60
Computer Science and Information Technology(CSC206) — Pass marks: 24
(Data Structures and Algorithms) — Time: 3 hours
Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.

Section A

Attempt any TWO questions: (2x10=20)

1. What is binary search tree? Explain with an example. Write an algorithm to search, insert and delete node in binary search tree.

2. What is Postfix expression? Write an algorithm to evaluate value of postfix expression. Trace the following expression into postfix expression.

(A+B*C)+(D-E/ F)

3. What is circular queue? Write an algorithm and C function to implement Circular queue.

Section B

Attempt any EIGHT questions: (8x5=40)

4. What is Recursion? Write a recursive algorithm to implement binary search.

5. Differentiate between array and pointer with example.

6. What is an algorithm? Write down the features of an algorithm.

7. How stack as ADT? Explain with example.

8. Write an algorithm and C function to delete node in singly link list.

9. Write an algorithm and C function for merge sort.

10. What do you mean by graph traversal? Explain prim's algorithm with example.

11. Differentiate between selection sort and bubble sort.

12. Write an algorithm to implement tower of Hanoi.

13. Write short notes on

a) Hashing

b) Doubly Linked list

