

KATHMANDU UNIVERSITY
Department of Computer Science and Engineering
Dhulikhel, Kavre
INTERNAL - II, February 2026

Course: Data Structures and Algorithms (COMP 202)

F.M: 20

Group: CE(II-I)

P.M: 8

Time: 1 hour

Attempt all Questions.

Q1. Define Abstract datatype. List any two applications of Queue data structure? Write algorithms for enqueue and dequeue operations in Circular Queue. [1+1+3]

Q2. Explain Circular linked list and Doubly Circular linked list with neat labeled diagrams. Write a program to implement a stack using a Singly linked list and perform PUSH and POP operations. [2+3]

Q3. Discuss any three ADT operations of a linked list. Explain Full Binary Tree and Complete Binary Tree with figure. [3+2]

Q4. Given the following traversals of a binary tree: (5 marks)

Preorder : M B A D C E Q N O P R S

Inorder : A B C D E M N O P Q R S

a) Construct the binary tree using the given traversals. [2]

b) Write the Postorder traversal of the constructed tree. [2]

c) Is the tree you constructed a Complete Binary Tree? Also, determine its height. [1]