

TILAK MAHARASHTRA VIDYAPEETH, PUNE
MASTER OF COMPUTER APPLICATIONS
EXAMINATION : JANUARY- 2023
SEMESTER - I

Sub : Advanced C Programming and Data Structures (MCA- 101-22)

Date : 04/01/2023

Total Marks : 60

Time: 10.00 am to 12.30 pm

Instruction:

1. All questions are compulsory unless and otherwise stated.
2. Bold figures to the right of every question are the maximum marks for that question.
3. Candidates are advised to attempt questions in order.
4. Answers written illegibly are likely to be marked zero.
5. Use of scientific calculators, Log tables, Mollier Charts is allowed.
6. Draw neat and labelled diagram wherever necessary.

Q. 1. Answer the following in 2 - 3 lines. (Any 5) (10)

1. Define – Prefix, Postfix.
2. What are arguments or parameters?
3. What are leaf nodes?
4. Define the term Data structures.
5. What is type casting?
6. What is an algorithm?
7. Define register storage class.

Q. 2. Answer the following in short. (Any 4) (20)

1. Write a function that performs binary search on integer list.
2. Construct a binary tree from the following sequence – 6,5,9,10, 11,13,4,3,7,12
3. Write a program to transpose the matrix.
4. Differentiate between linear and non-linear
5. Write a program to print Factorial using recursion.
6. Write steps to create binary tree.

Q. 3. Answer the following in detail. (Any 3) (30)

1. Write an algorithm to convert an infix expression to postfix expression.
2. What is dynamic memory allocation? Explain all functions in details.
3. Define tree. Illustrate with example different traversal methods of tree.
4. Write a program to sort array using selection sort.
5. Write a function to add node at the beginning of linked list.
