MSCCS-07/MSCCS-201/MSCCSC-201/MCA-201

June - Examination 2026

MSCCS (Final)/ MCA (IInd Year) Examination

Data Structure and Algorithm

Paper : MSCCS-07/MSCCS-201/MSCCSC-201/MCA-201

[*Time: **3** Hours*] [*Maximum Marks: **80***]

Note :- The question paper is divided into three Sections A, B and C. Write answers as per the given instructions in each section.

Section-A **8×2=16**

(Very Short Answer Type Questions)

Note :- Answer **all** questions. As per the nature of the question delimit your answer in one word, one sentence or maximum up to **30** words. Each question carries **2** marks.

1. (i) Define linear data structure.

   (ii) Define a two-dimensional array.

   (iii) What is traversal in linked list?

   (iv) What is PUSH operation in Stack?

   (v) Define binary search tree.

   (vi) Define minimum spanning tree.

   (vii) What is merge sort?

   (viii) Define NP-complete problem.

Section-B **4×8=32**

(Short Answer Type Questions)

Note :- Answer **any four** questions. You have to delimit your each answer maximum up to **200** words. Each question carries **8** marks.

2. Explain time and space complexity of algorithms.

3. Explain the needs and advantages of linked lists.

4. Explain queue operations with examples.

5. Explain binary tree and its properties.

6. Explain BFS traversal algorithm.

7. Explain bubble sort with algorithm.

8. Differentiate between greedy method and dynamic programming.

9. Discuss branch and bound method.

Section-C

2×16=32

(Long Answer Type Questions)

Note :- Answer **any two** questions. You have to delimit your each answer maximum up to **500** words. Each question carries **16** marks.

10. Discuss algorithm design, characteristics, complexity analysis and order notations in detail.

11. Explain stack data structure, operations and implementations in detail.

12. Explain travelling salesman and assignment problems with suitable examples.

13. Explain various sorting algorithms with time complexities.
