



FD-614

M.A./M.Sc. 3rd Semester
Examination, Dec.-Jan., 2021-22

MATHEMATICS

Optional (A)

Paper - III

Fundamentals of Computer Science

Time : Three Hours] [*Maximum Marks* : 70

Note : Answer any **two** parts from each question. All questions carry equal marks.

Unit-I

1. (a) Explain the concepts of object-oriented programming.
- (b) What is Class? Explain programming classes and scope.
- (c) Explain assignment and destruction with example.

(2)

Unit-II

2. (a) Explain function overloading and operators with example.
- (b) Explain in detail about templates.
- (c) Explain virtual functions with example.

Unit-III

3. (a) Write a short note on W notation.
- (b) What is List? Explain linked list representation.
- (c) Write a program for deletion in stack.

Unit-IV

4. (a) What is Tree? Describe any two types of binary tree.
- (b) What is B-tree? Explain the concept with diagram.
- (c) Define the level of a node in a binary tree and draw a complete binary tree of depth 4.

Unit-V

5. (a) Differentiate between Insertion and Shell sort.

(3)

- (b) What is Sorting ? Write a program for quick sort.
 - (c) Explain hashing open and closed with example.
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