ED-614

M.A./M.Sc. 3rd Semester
Examination, March-April 2021

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*) Describe in detail about object-oriented programming.

(*b*) Write a program using nested classes.

(*c*) Write a program using destruction.

Unit-II

2. (*a*) Describe operators in detail.

(*b*) Describe in detail about virtual functions.

(*c*) Describe class templates in detail.

Unit-III

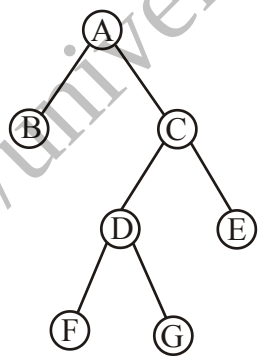
3. (*a*) Describe W notation in detail.

(*b*) Explain lists in detail.

(*c*) Write a program in queues.

Unit-IV

4. (*a*) Describe in detail about following tree.



(*b*) Traverse a non-empty binary tree in a postorder.

(*c*) Express the following expression in the form of binary tree

(A + B * C) $ ((A + B) * C)

Unit-V

5. (*a*) Describe sorting in detail.

(*b*) Write a program for quick-sort.

(*c*) Draw a flow chart for comparision of $n \log_{10} n$ and n_2 for various values of n using sorting.

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