

2017

Full Marks - 40

Time - 3 hours

The questions are of equal value

Answer *all* questions

1. a) How is a class declared in C++ ? What is an abstract class ? When do we declare a member of a class static ?
- b) Explain the importance of constructors and destructors with example ? What is a default constructor ?

OR

- c) Define friend class and specify its importance. Explain with suitable example.
 - d) Explain the operators (new and delete) used for dynamic memory allocation with examples.
2. a) What is overloading ? Define function overloading with a suitable example.

[2]

- b) Explain protected data with private and public inheritance.

OR

- c) Write an example-program for virtual functions. When do we make a virtual function 'pure' ?
- d) Explain the concept of runtime polymorphism.

3. a) What are the basic data structures available in C++ ? Write a C++ program to implement STACK and its operations : PUSH and POP.
- b) What is a queue ? Discuss the array implementation of a queue.

OR

- c) Define a linked list. Explain the various operations of a singly linked list with algorithm and program.
- d) What is hashing ? Explain the various hash functions with example.

[3]

4. a) Discuss the different methods of traversing a binary tree.

- b) What is a graph ? Explain the depth first search tree.

OR

- a) Describe the concept of Bubble sort with example and algorithm.
- b) With example explain the binary search algorithm technique.

L-621-0.6

