

## JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

T-1 EXAMINATION, FEBRUARY, 2016

B Tech (ECE) 6<sup>th</sup> Semester

SUBJECT CODE: 10B11CI614

MAX. MARKS: 15

SUBJECT NAME: Object-Oriented Systems &amp; Programming

COURSE CREDITS: 4

TIME: 1 Hour

*Note: All the questions are compulsory. Make necessary assumptions, if required.*

1. What is the need of initialization of objects using a constructor? What is difference between normal initialization and dynamic initialization of an object? [2]
2. Discuss the importance of a friend function. Give an example where the friend function is better choice than a member function. [2]
3. What are the advantages and disadvantages of an inline function? When are inline functions preferred over normal member functions? [2]
4. Define a class Complex with data members as: real and imaginary. The class should also have methods to enter and display the complex numbers, and to add the two complex numbers. In addition to this, specify a constraint in this class so that the class cannot be instantiated more than thrice. [3]
5. Define a Stack class in C++, using the linked list. The class must have methods to push, pop and display the integer type elements. [3]
6. Implement the following structure of inheritance in C++. The class A has methods to enter and display the data (The data members of all the classes are shown in the class diagram). All the subclasses override the methods enter() and display() and call the constructors (default and parameterized) of the base class(es). [3]

