

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- 2016

B.Tech.(ECE) VI Semester

COURSE CODE: 10B11CI614

MAX. MARKS: 25

COURSE NAME: Object-Oriented Systems & Programming

COURSE CREDITS: 4

MAX. TIME: 1Hr 30 Min

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. Make your necessary assumptions, if required.

1. Define function templates to enter, display and sort an array. In the main() method run these functions for *int*, *float* and *string* type. [4 marks]
2. Create a class named *Student*. Data members include the student's roll number, first name, last name, class and the program of study. Member functions include overloaded extraction and insertions operators to enter and display the record of the student. In the main() method write multiple objects of this class into the file say *stud.txt*. There should also be an option to search student's record on the basis of their roll number, from the file. [6 marks]
3. Define two classes *Distance1* (*mile* as the only data member) and *Distance2* (*kmeter* and *meter* as two data members). Write a conversion function to convert *Distance1* object into *Distance2* object (1 mile = 1.61 kmeters). [5 marks]
4. Design a class named as *StackOfIntegers* in C++, with the following features:
 - i. A private data field of type *int[]* to store data in the stack.
 - ii. An overloaded operator method (-) to pop the first element from the stack.
 - iii. An overloaded operator method (+) to push an element into the stack.[4 marks]
5. Differentiate between the following terms:
 - i. Virtual function and virtual base class
 - ii. Static and dynamic binding
 - iii. Class template and function template[3×2=6 marks]