

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT  
FINAL EXAMINATION- JULY -2016  
Summer Semester

COURSE CODE: 10B11CI311

MAX. MARKS: 50

COURSE NAME: Object Oriented Programming

MAX. TIME: 2 HRS

COURSE CREDITS: 4

*Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.*

**Q 1.** a) Write a program using function template to find the cube of a given integer, float and a double number.

b) How a template functions overloaded? Give a suitable example.

[10]

**Q 2.** Write a program that uses a "stock.dat" having item name, item code and cost. Perform the following operations on the file.

(i) Add a new item to the file.

(ii) Modify the details of an item

(iii) Display the contents of the file

[10]

**Q 3.** a) Why is it necessary to overload an operator? List at least four rules for operator overloading.

b) Write a program to add two distances comprising of feet and inches using operator overloading.

[10]

**Q 4.** a) How polymorphism is accomplished in C++? Give a suitable example.

b) When do we make a virtual function "pure"? What are the implications of making a pure virtual function?

[10]

**Q 5.** Suppose we want to develop software for an alarm clock.

The clock shows the time of day. Using buttons, the user can set the hours and minutes fields individually, and choose between 12 and 24-hour display. It is possible to set one or two alarms. When an alarm fires, it will sound some noise. The user can turn it off, or choose to 'snooze'. If the user does not respond at all, the alarm will turn off itself after 2 minutes. 'Snoozing' means to turn off the sound, but the alarm will fire again after some minutes of delay. This 'snoozing time' is pre-adjustable.

Identify the top-level functional requirement for the clock, and model it with a use case diagram.

[10]