

**Quiz – 3**  
April 27, 2006

1) (5 pts) List 4 key features of Object Oriented programming:

- i. Inheritance
- ii. Encapsulation
- iii. Polymorphism
- iv. Data Abstraction

2) (15 pts) Consider the following class hierarchy:

```
class person {...}
class student : public person {...}
class professor : public person {...}

void person::print_label() {...}
void professor::print_label() {...}
void student::print_label(int student_id) {...}

student s;
professor p;
person *x = &s;
person *y = &p;
person z = p;
```

Which *print\_label* methods will be called upon the following invocations assuming dynamic method binding is in effect:

|                   |   |                           |
|-------------------|---|---------------------------|
| s.print_label();  | → | person::print_label();    |
| p.print_label();  | → | professor::print_label(); |
| x->print_label(); | → | person::print_label();    |
| y->print_label(); | → | professor::print_label(); |
| z.print_label();  | → | person::print_label();    |