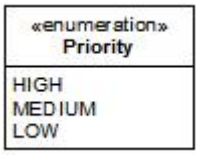
OOADP Exam 2009 Answers

1. (3) C
2. (3) B
3. (3) A and D
4. (3)



5. (3)

```
public class HelloWorld {
      public static void main(String[] args) {
            System.out.println("Hello world!");
      }
}
```

6. (3)

```
a-5-5
-10a
```

7. (3)

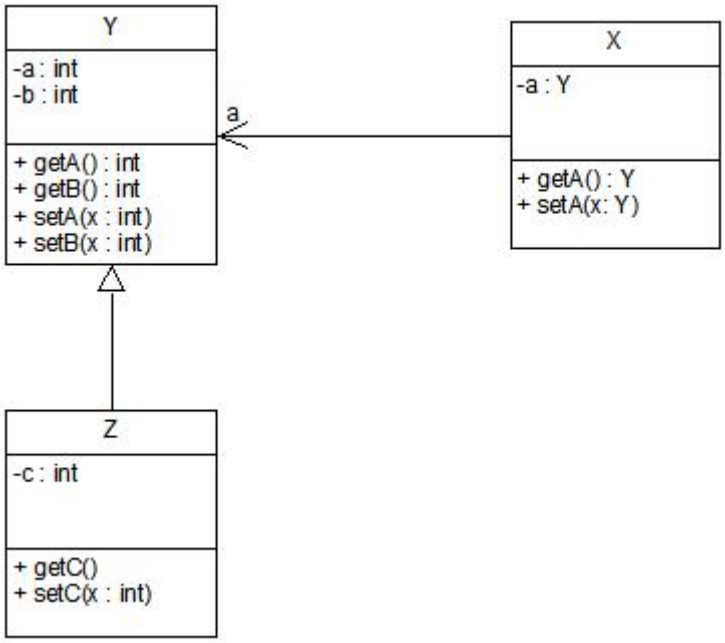
```
int[] a = {1,2,3,4};
for (int i = a.length - 1; i >= 0; i--)
      System.out.println(a[i]);
```

8. (3)
   A. syntax
   B. semantics.
9. (3)
   Analysis, Design, Implementation, Testing, Maintenance
10. (3)
    B
11. (3)
    this.x = x;
12. (4)
    a. Use-case diagram.
    b. Actor.
    c. Use case.
    d. The system.
13. (4)
    a. UML class diagram
    b. No.
    c. 2 or more.
    d. d().
14. (4)
    a. Specialization.
    b. e().

c. d(x:int)
d. a, b and c.

15. (4)
    1
    2
    3
    4
16. (4)
    ```
    public int a() {return 0;}
    ```
17. (4)
    a. A sequence diagram.
    b. A synchronous message.
    c. Participants.
    d. A return value.
18. (4)
    a. A state machine diagram
    b. “returned()” or “borrowed()”
    c. “book.copyReturned(self)” or “book.copyBorrowed(self)”
    d. “on the shelf” or “on loan”
19. (6)
    A no-args constructor needs to be inserted inside the Point class.
    Specifically, we need something like
    public Point(){}
    inserted between lines 3 and 9 but outside lines 5-8.
20. (6)
    ```
    Wibble exception: Oops! (5)
    ```
21. (6)
    XXX should be >=
    YYY should be >
    ZZZ should be i--
22. (10)
    “An object is a **thing** that has **behavior**, **state** and **identity**.”
    “Thing”: An object should represent or be an abstraction of an identifiable concept or physical thing.
    “State”: The data encapsulated in an object and stored in its attributes (instance variables, data members).
    “Behaviour”: The way an object acts and reacts in response to messages.
    “Identity”: Two objects can be equal (i.e., have equal values in corresponding attributes) without being the same object. Two objects have the same identity if and only if they occupy the same place in memory.

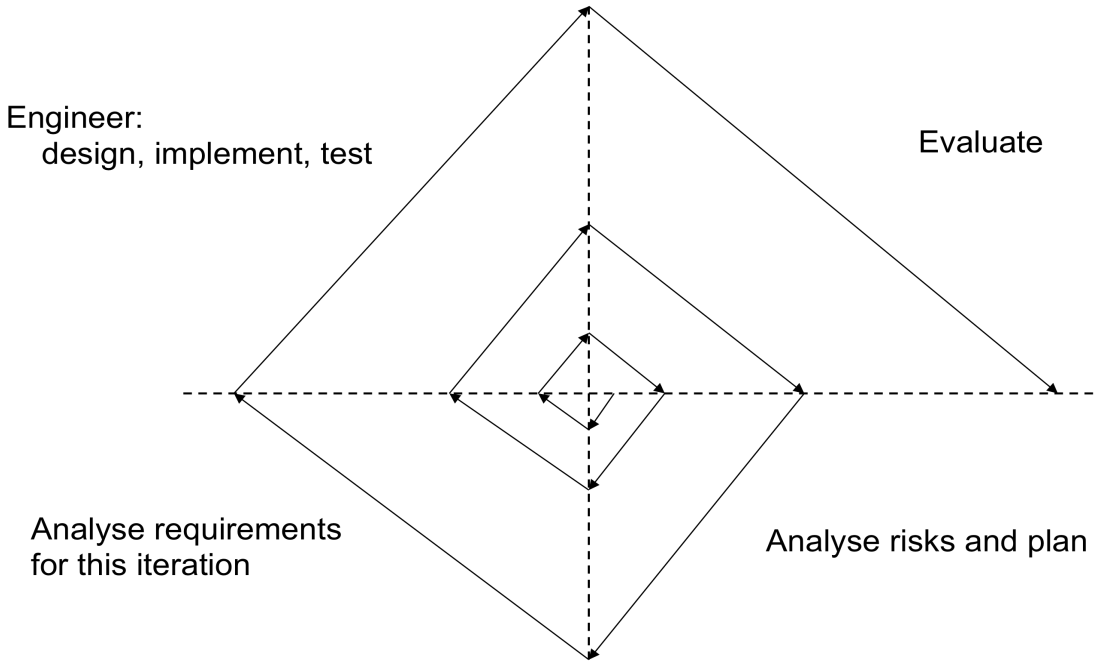
23. (15)



24. (15)

a. Assumes that once a phase has ended, it is never returned to; whereas we actually always need to be able to revise earlier decisions.

b.



c. Each iteration in an iterative process cannot be entirely devoted to analysis or entirely devoted to design. Each iteration must include analysis, design and other activities.

25. (20)

Various possible answers.

26. (20)

The following is one possible answer.

```
public class Circle implements Comparable<Circle>{
      private double x = 1.0;
      private double y = 2.0;
      private double d = 3.0;
      public Circle(){}
      public Circle(double x, double y, double
diameter) {
            this.x = x;
            this.y = y;
            d = diameter;
      }
      public String toString() {
            return "Centre is ("+x+","+y+"), diameter is
"+ d;
      }
      public int compareTo(Circle o) {
            if (x < o.x) return -1;
            if (x > o.x) return 1;
            if (y < o.y) return -1;
            if (y > o.y) return 1;
            if (d < o.d) return -1;
            if (d > o.d) return 1;
            return 0;
      }
}
```