



ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE - 2008
OBJECT TECHNOLOGY AND UML
SEMESTER - 6

Time : 3 Hours]

[Full Marks : 70

GROUP - A

(Objective Type Questions)

1. Choose the correct answers for the following : 10 × 1 = 10

i) Which view describes the organization of static software modules in development environment ?

- a) Logical view
- b) Implementation view
- c) Deployment view
- d) Process view.

ii) Which view shows how the various executables and other run-time components are mapped to underlying platforms ?

- a) Logical view
- b) Implementation view
- c) Deployment view
- d) Process view.

iii) "Java is Platform Independent", Explain briefly.

State whether the following statements are 'True or False'.

iv) 'Protected' data members are not accessible by non-subclass members.

v) Applet is an application program.

vi) Default thread priority value is 10 in Java.

vii) A Class, that is abstract, cannot be instantiated.

viii) UML was proposed by , and

ix) UML consists of views and diagrams.

x) Which view consists of few key scenarios or use-cases that are used to drive and validate the architecture ?

- a) Logical view
- b) Implementation view
- c) Deployment view
- d) Use-case view.

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GROUP - B

(Short Answer Type Questions)

Answer any *three* of the following.

3 × 5 = 15

- 2. a) Explain different access specifiers. 3
- b) What is the difference between equals and == operator ? 2
- 3. Differentiate between the following : 5 × 1
 - a) Abstract class and interface
 - b) Static and final keyword
 - c) Method overloading and method overriding
 - d) Instant variable and class variable
 - e) Object and object reference.
- 4. What is the basic property of a static variable ? Differentiate among final, finally and finalize. 2 + 3
- 5. a) What are the methods in Applet
- b) Explain Aggregation & Generalization.
- c) Explain, what will be the output of the following code with justification :

```
public class test {
    public static void main ( string args [ ] ) {
        B b = new B ( 10 );
        int c = b.print (20);
    }
}

class A {
    private int a;
    public A ( int a1 ) {
        a = a1;
    }
    public void print ( int data ) {
        System.out.println ( "Result:" + data );
    }
}
```

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```

}
class B extends A {
    public B ( int b1 ) {
        super ( b1 );
    }
    public int print ( int data ) {
        system.out.println ( "result:" + data );
        return data;
    }
}

```

6. What is the basic goal of UML ? What do you mean by collaboration diagram ? 2 + 3

GROUP - C

(Long Answer Type Questions)

Answer any *three* questions.

3 × 15 = 45

7. Compare the following diagrams : 3 × 5

- a) Sequence diagram and collaboration diagram.
- b) Activity diagram and state chart diagram.
- c) Class diagram and object diagram.

8. a) Write code to show how object cloning can be achieved by passing objects to methods (or constructors). 5

b) Discuss Applet life cycle indicating the functions, which are used. 7

c) Will the following code compile and run ? If yes, what will be the output ? If no, then give reason for failure. 3

```

class Exam {
    public static void main ( String args [ ] ) {
        int x;
        x = 10;
        if ( x == 10 )
        {
            int y = 20;

```

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```
System.out.println ("x and y:" + x + " " + y );
```

```
x = y* 2;
```

```
}
```

```
y = 100;
```

```
System.out.println ("x is " + x);
```

```
x = y* 2;
```

```
}
```

```
y = 100;
```

```
System.out.println ("x is" + x);
```

```
}
```

```
}
```

9. a) Differentiate between procedural oriented programming and object oriented programming. 4
- b) Why Java is called a 'strongly typed' language ? 3
- c) What is 'dynamic method dispatch' in Java ? Explain with an example. 3
- d) Differentiate between 'up casting' and 'down casting' with suitable examples. 5
10. a) What is thread ? Explain thread creation methods. 5
- b) How does synchronized keyword works ? Why is thread synchronization important for multithreaded process ? 7
- c) What are packages and what are they used for ? 3
11. a) Explain "usecase diagram". What are the essential criteria for ideal usecase diagram. What are "extends" and "includes" constructs in usecase diagram. Draw a usecase diagram for a Nursing home functionality where example actors are Patient, Doctor, Reception staff, billing staff, Administrator etc. What is usecase template ? 1 + 2 + 2 + 4 + 1
- b) Explain State chart and activity diagram with example. 5

END

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