Java SE 7 Programmer I

Exam A

QUESTION 1

A programmer is designing a class to encapsulate the information about an inventory item. A JavaBeans component is needed to do this. The InventoryItem class has private instance variables to store the item information:

```
private int itemId;
private String name;
private String description;
```

Which method signature follows the JavaBeans naming standards for modifying the itemId instance variable?

A. itemID(int itemId)

B. update(int itemId)

C. setItemId(int itemId)

D. mutateItemId(int itemId)

E. updateItemID(int itemId)

QUESTION 2

A JavaBeans component has the following field:

```
private boolean enabled;
```

Which two pairs of method declarations follow the JavaBeans standard for accessing this field? (Choose two.)

A. public void setEnabled(boolean enabled)
public boolean getEnabled()

B. public void setEnabled(boolean enabled)
public void isEnabled()

C. public void setEnabled(boolean enabled)
public boolean isEnabled()

D. public boolean setEnabled(boolean enabled)
public boolean getEnabled()

QUESTION 3

Given:

```
public class CreditCard {

   private String cardID;
   private int limit;
   public  String ownerName;

   public void setCardlnformation(String cardID, String ownerName,
                                  int limit) {
      this. cardID = cardID;
      this.ownerName = ownerName;
      this.limit = limit;
   }
}
```

Which is true?

A. The class is fully encapsulated.

B. The code demonstrates polymorphism

C. The ownerName variable breaks encapsulation.

D. The cardID and limit variables break polymorphism

E. The setCardInformation method breaks encapsulation

QUESTION 4

What is the result?

```
11. public class Person {
12.    String name = "No name";
13.    public Person(String nm) { name = nm; }
14. }
15.
16. public class Employee extends Person {
17.    String empID = "0000";
18.    public Employee(String id) { empID = id; }
19. }
20.
21. public class EmployeeTest {
22.    public static void main(String[] args){
23.        Employee e = new Employee("4321");
24.        System.out.println(e.empID);
25.    }
26. }
```

A. 4321

B. 0000

C. An exception is thrown at runtime.

D. Compilation fails because of an error in line 18.

QUESTION 5

Given:

```
public class Plant {
    private String name;

    public Plant(String name) {
        this.name = name;
    }

    public String getName() {
        return name;
    }
}
```

```
public class Tree extends Plant {
    public void growFruit() {
    }

    public void dropLeaves() {
    }
}
```

Which statement is true?

A. The code will compile without changes.

B. The code will compile if public Tree() { Plant(); } is added to the Tree class.

C. The code will compile if public Plant() { Tree(); } is added to the Plant class.

D. The code will compile if public Plant() { this("fern"); } is added to the Plant class.

E. The code will compile if public Plant() { Plant("fern"); } is added to the Plant class.

QUESTION 6
Given:

```
class Employee {
    String name;
    double baseSalary;

    Employee(String name, double baseSalary) {
        this.name = name;
        this.baseSalary = baseSalary;
    }
}

09. public class SalesPerson extends Employee {
10.    double commission;
11.
12.    public SalesPerson(String name, double baseSalary, double commission) {
13.        // insert code here
14.    }
15. }
```

Which two code fragments, inserted independently at line 13, will compile? (Choose two.)

A. super(name, baseSalary);
B. this.commission = commission;
C. super(); this.commission = commission;
D. this.commission = commission; super();
E. super(name, baseSalary); this.commission = commission;
F. this.commission = commission; super(name, baseSalary);
G. super(name, baseSalary, commission);

QUESTION 7
Given:

```
class Atom {
    Atom() { System.out.print("atom "); }
}

class Rock extends Atom {
    Rock(String type) { System.out.print(type); }
}

public class Mountain extends Rock {
    Mountain() {
        super("granite ");
        new Rock("granite ");
    }
    public static void main(String[] a) { new Mountain(); }
}
```

What is the result?

A. Compilation fails.
B. atom granite
C. granite granite
D. atom granite granite
E. An exception is thrown at runtime.
F. atom granite atom granite

QUESTION 8
Given:

```
01. class Super {
02.    private int a;
03.    protected Super(int a) { this.a = a; }
04. }

11. class Sub extends Super {
12.    public Sub(int a) { super(a); }
13.    public Sub() { this.a = 5; }
14. }
```

Which two, independently, will allow Sub to compile? (Choose two.)

A. Change line 2 to:
`public int a;`

B. Change line 2 to:
`protected int a;`

C. Change line 13 to:
`public Sub() { this(5); }`

D. Change line 13 to:
`public Sub() { super(5); }`

E. Change line 13 to:
`public Sub() { super(a); }`

QUESTION 9
Given:

```
class ClassA {
    public int numberOfInstances;

    protected ClassA(int numberOfInstances) {
        this.numberOfInstances = numberOfInstances;
    }
}

public class ExtendedA extends ClassA {
    private ExtendedA(int numberOfInstances) {
        super(numberOfInstances);
    }

    public static void main(String[] args) {
        ExtendedA ext = new ExtendedA(420);
        System.out.print(ext.numberOfInstances);
    }
}
```

Which statement is true?

A. 420 is the output.
B. An exception is thrown at runtime.
C. All constructors must be declared public.
D. Constructors CANNOT use the private modifier.
E. Constructors CANNOT use the protected modifier.

QUESTION 10

Given:

```
class X {
    X() { System.out.print(1); }

    X(int x) {
        this(); System.out.print(2);
    }
}

public class Y extends X {
    Y() { super(6); System.out.print(3); }

    Y(int y) {
        this(); System.out.println(4);
    }

    public static void main(String[] a) { new Y(5); }
}
```

What is the result?

A. 13
B. 134
C. 1234
D. 2134
E. 2143
F. 4321

QUESTION 11
Given:

```
public class Hello {
    String title;
    int value;

    public Hello() {
        title += " World";
    }

    public Hello(int value) {
        this.value = value;
        title = "Hello";
        Hello();
    }
}
```

and:

```
Hello c = new Hello(5);
System.out.println(c.title);
```

What is the result?

A. Hello
B. Hello World
C. Compilation fails.
D. Hello World 5
E. The code runs with no output.

F. An exception is thrown at runtime.

QUESTION 12
Given:

```
class C1 {
    public C1() { System.out.print(1); }
}
class C2 extends C1 {
    public C2() { System.out.print(2); }
}
class C3 extends C2 {
    public C3() { System.out.println(3); }
}
public class Ctest {
    public static void main(String[] a) { new C3(); }
}
```

What is the result?

A. 3
B. 23
C. 32
D. 123
E. 321
F. Compilation fails.
G. An exception is thrown at runtime.

QUESTION 13
View this code:

```
public class Car {
    private int wheelCount;
    private String vin;
    public Car(String vin){
        this.vin = vin;
        this.wheelCount = 4;
    }
    public String drive(){
        return "zoom-zoom";
    }
    public String getInfo() {
        return "VIN: " + vin + " wheels: " + wheelCount;
    }
}
```

And

```
public class MeGo extends Car {
    public MeGo(String vin) {
        this.wheelCount = 3;
    }
}
```

What two must the programmer do to correct the compilation errors? (Choose two.)

A. insert a call to this() in the Car constructor
B. insert a call to this() in the MeGo constructor

C. insert a call to super() in the MeGo constructor
D. insert a call to super(vin) in the MeGo constructor
E. change the wheelCount variable in Car to protected
F. change line 3 in the MeGo class to super.wheelCount = 3;

QUESTION 14
Given

```
class Foo {
    static void alpha() {
        /* more code here */
    }

    void beta() {
        /* more code here */
    }
}
```

Which two statements are true? (Choose two.)

A. Foo.beta() is a valid invocation of beta().
B. Foo.alpha() is a valid invocation of alpha()
C. Method beta() can directly call method alpha().
D. Method alpha() can directly call method beta().

QUESTION 15
Given the following code:

```
public class Sequence {
   Sequence() {
       System.out.print("c ");
   }
   {
       System.out.print("y ");
   }
   public static void main(String[] args) {
       new Sequence().go();
   }
   void go() {
       System.out.print("g ");
   }
   static {
       System.out.print("x ");
   }
}
```

What is the result when this code is executed?

A. `c x y g`
B. `c g x y`
C. `x c y g`
D. `x y c g`
E. `y x c g`
F. `y c g x`
G. `Compilations fails`
H. `An exception is thrown`

QUESTION 16
Given the following code:

```
class Init {
     Init(int x) {
         System.out.println("1-arg const");
     }
     Init() {
         System.out.println("no-arg const");
     }
     static {
         System.out.println("1st static init");
     }
     {
         System.out.println("1st instance init");
     }
     {
         System.out.println("2nd instance init");
     }
     static {
         System.out.println("2nd static init");
     }
     public static void main(String [] args) {
         new Init();
         new Init(7);
     }
}
```

What is the result when this code is executed?

A. Compilation fails.

B. An exception is thrown

C.
```
1st static init
2nd static init
1st instance init
2nd instance init
no-arg const
1st instance init
2nd instance init
1-arg const
```

D.
```
1st static init
2nd static init
no-arg const
1st instance init
2nd instance init
1-arg const
1st instance init
2nd instance init
```

E.
```
1st static init
2nd static init
no-arg const
1-arg const
```

QUESTION 17
Given the following code:

```
public class Ebb {
     static int x = 7;
     public static void main(String[] args) {
        String s = "";
        for(int y = 0; y < 3; y++) {
            x++;
            switch(x) {
                case 8: s += "8 ";
                case 9: s += "9 ";
                case 10: {
                   s+= "10 ";
                   break;
                }
                default: s += "d ";
                case 13: s+= "13 ";
             }
        }
        System.out.println(s);
      }
      static { x++; }
}
```

What is the result when this code is executed?

A. 9 10 d
B. 8 9 10 d
C. 9 10 10 d
D. 9 10 10 d 13
E. 8 9 10 10 d 13
F. 8 9 10 9 10 10 d 13
G. Compilation fails
H. An exception is thrown

QUESTION 18
Given:

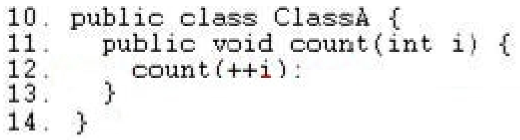
```
package test;

class Target {
    public String name = "hello";
}
```

What can directly access and change the value of the variable name?

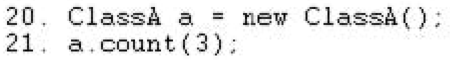
A. any class
B. only the Target class
C. any class in the test package
D. any class that extends Target

QUESTION 19
Given:



```
public class ClassA {
  public void count(int i) {
    count(++i);
  }
}
```

and:



```
ClassA a = new ClassA();
a.count(3);
```

Which exception or error should be thrown by the virtual machine?

A. StackOverflowError
B. NullPointerException
C. NumberFormatException

D. IllegalArgumentException

E. ExceptionInInitializerError

QUESTION 20

Given:

```
class ClassA {}
class ClassB extends ClassA {}
class ClassC extends ClassA {}
```

and:

```
ClassA p0 = new ClassA();
ClassB p1 = new ClassB();
ClassC p2 = new ClassC();
ClassA p3 = new ClassB();
ClassA p4 = new ClassC();
```

Which three are valid? (Choose three.)

A. `p0 = p1;`

B. `p1 = p2;`

C. `p2 = p4;`

D. `p2 = (ClassC)p1;`

E. `p1 = (ClassB)p3;`

F. `p2 = (ClassC)p4;`

QUESTION 21

Given:

```
05. class Building { }
06. public class Barn extends Building {
07.    public static void main(String[] args) {
08.       Building build1 = new Building();
09.       Barn barn1 = new Barn();
10.       Barn barn2 = (Barn) build1;
11.       Object obj1 = (Object) build1;
12.       String str1 = (String) build1;
13.       Building build2 = (Building) barn1;
14.    }
15. }
```

Which is true?

A. If line 10 is removed, the compilation succeeds.

B. If line 11 is removed, the compilation succeeds.

C. If line 12 is removed, the compilation succeeds.

D. If line 13 is removed, the compilation succeeds.

E. More than one line must be removed for compilation to succeed.