

Certification

SCJP/OCJP

Mock Generics

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Table of Contents

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1. Generics

4. Chapter: Generics

1. Generics Questions

4.1.1. What is the result of compiling and running the following program?

Author: Yasser Ibrahim

What is the result of compiling and running the following program?

```
import java.util.ArrayList;
import java.util.List;

public class Tester {

    public static void main(String[] args) {

        List<String> list1 = new ArrayList<String>();//line 1
        List<Object> list2 = list1;//line 2
        list2.add(new Integer(12));//line 3
        System.out.println(list2.size());//line 4

    }
}
```

Please choose only one answer:

- Compilation error at line 1, must initialize the size
- Compilation error at line 2, Type mismatch, cannot convert from List<String> to List<Object>
- Compilation error at line 3, can add objects of type String only
- 1

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4.1.2. What is the result of compiling and running the following program u...

Author: JavaChamp Team

What is the result of compiling and running the following program using JDK 1.5 or higher?

```
import java.util.ArrayList;
import java.util.List;

interface chewable {}

class Gum implements chewable {}

public class Tester {

    public static void main(String[] args) {
        List<Gum> list1 = new ArrayList<Gum>();
        list1.add(new Gum());
        List list2 = list1;
        list2.add(new Integer(9));
        System.out.println(list2.size());
    }
}
```

Please choose only one answer:

- Compilation error
- 2 will be printed but with warnings
- 2 will be printed without warnings
- An exception will be thrown at runtime

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4.1.3. What is the result of compiling and running the following program u...

Author: Yasser Ibrahim

What is the result of compiling and running the following program using jdk 1.5 or higher?

```
import java.util.ArrayList;
import java.util.List;

interface chewable {}

class Gum implements chewable {}

class Meat implements chewable {}

public class Tester {

    public static void main(String[] args) {
        List list1 = new ArrayList<chewable>();// line 1
        list1.add(new Gum());// line 2
        list1.add(new Meat());// line 3
        list1.add(new Integer(9));// line 4
        System.out.println(list1.size());// line 5
    }
}
```

Please choose only one answer:

- Compilation error at line 1
- Compilation error at line 4
- Runtime exception thrown at line 1
- Runtime exception thrown at line 4
- 3

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4.1.4. Which of the following is a correct declaration and instantiation o...

Author: JavaChamp Team

Which of the following is a correct declaration and instantiation of list?

Please choose all the answers that apply:

- `List<String> list = new ArrayList<String>();`
- `List<?> list = new ArrayList<String>();`
- `List<? extends Object> list = new ArrayList<String>();`
- `List<Object> list = new ArrayList<String>();`
- `List list = new ArrayList<String>();`
- `List list = new ArrayList<?>();`

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4.1.5. The following code contains a compilation error, at what line?

Author: Yasser Ibrahim

The following code contains a compilation error, at what line?

```
import java.util.ArrayList;
import java.util.List;

interface Chewable {}
class Meat implements Chewable {}

public class Tester {

    public static void main(String[] args) {

        List<? extends Chewable> list1 = new ArrayList<Meat>(); // Line 11

        List<Chewable> list2      = new ArrayList<Chewable>(); // Line 13

        Meat meat = new Meat();

        list1.add(meat); // Line 17

        list2.add(meat); // Line 19
    }
}
```

Please choose only one answer:

- Line 11
- Line 13
- Line 17
- Line 19

Check the answer of this question online at QuizOver.com:

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4.1.6. The following program contains two compilation errors, at what lines?

Author: JavaChamp Team

The following program contains two compilation errors, at what lines?

```
import java.util.ArrayList;
import java.util.List;

interface Chewable {}
class Meat implements Chewable {}

public class Tester {

    public static List<? extends Chewable> printSize(List<? extends Chewable> list) { // Line 10
        System.out.println(list.size());
        return list;
    }
    public static void main(String[] args) {

        List<? extends Chewable> list1 = new ArrayList<Meat>(); // Line 16
        List<Chewable> list2 = new ArrayList<Chewable>(); // Line 17
        List<Meat> list3 = new ArrayList<Meat>(); // Line 18

        list1 = printSize(list1); // Line 20
        list2 = printSize(list2); // Line 21
        list3 = printSize(list3); // Line 22

    }
}
```

Please choose all the answers that apply:

- Line 10
- Line 16
- Line 17
- Line 18
- Line 20
- Line 21
- Line 22

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4.1.7. When were generics first introduced in Java?

Author: JavaChamp Team

When were generics first introduced in Java?

Please choose only one answer:

- in JDK 1.4
- in JDK 1.5
- in JDK 1.6

Check the answer of this question online at QuizOver.com:

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4.1.8. What is the expected output of compiling and running the following ...

Author: Yasser Ibrahim

What is the expected output of compiling and running the following code?

```
import java.util.ArrayList;
import java.util.Collections;
import java.util.List;

public class Test{
    public static void main(String[] args) {

        List<Foo> myFooList = new ArrayList<Foo>();
        myFooList.add(new Foo("C"));
        myFooList.add(new Foo("A"));
        myFooList.add(new Foo("D"));

        Collections.sort(myFooList);
        System.out.print(myFooList.get(0).code);
    }
}

class Foo implements Comparable<Foo> {
    String code;

    Foo(String c) {
        code = c;
    }

    int compareTo(Foo f) {
        return this.code.compareTo(f.code);
    }
}
```

Please choose only one answer:

- A
- C
- D
- no output is printed
- compilation error
- exception thrown at run time

Check the answer of this question online at QuizOver.com:

Question: [how to sort a generic collection?](#)

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4.1.9. What is the expected output of compiling and running the following ...

Author: Yasser Ibrahim

What is the expected output of compiling and running the following code?

```
import java.util.ArrayList;
import java.util.List;

public class Test{
    public static void main(String[] args) {

        List list = new ArrayList();

        list.add("Hello");
        Foo f = new Foo();
        list.add(f);

        f = list.get(1);
        System.out.print(list.get(0) + "-" + f);
    }
}

class Foo {
    public String toString() {
        return "Foo";
    }
}
```

Please choose only one answer:

- Hello-Foo
- compilation error
- exception at run time

Check the answer of this question online at QuizOver.com:

Question: [inserting into a non-generic collection in java](#)

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4.1.10. Considering that all needed imports are there, what, inserted indep...

Author: JavaChamp Team

Considering that all needed imports are there, what, inserted independently at line 1, will compile?

```
class A {}
class B extends A{}
class C extends B{}

public class Test {

    public List<? extends B> ring(){
        // line 1
    }
}
```

Please choose all the answers that apply:

- return new ArrayList();
- return new ArrayList<C>();
- return new ArrayList<A>();
- return new ArrayList<? extends B>();
- return new LinkedList();
- return new PriorityQueue();
- return new ArrayList();

Check the answer of this question online at QuizOver.com:

Question: [generic collection as return type in java](#)

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4.1.11. Will the following code compile?

Author: Yasser Ibrahim

Will the following code compile?

```
import java.util.*;

class B {
}

class C extends B {
}

public class Test {

    public static <E extends B> Queue<E> ring(List<E> list) {
        return null;
    }

    public static void main(String[] args) {
        List<C> list1 = new ArrayList<C>();
        ArrayList<C> list2 = new ArrayList<C>();

        Queue<C> q1;
        PriorityQueue<C> q2;

        q1 = ring(list1); // line1
        q1 = ring(list2); // line2
        q2 = ring(list1); // line3
        q2 = ring(list2); // line4
    }
}
```

Please choose all the answers that apply:

- Yes, the program is free of compilation errors
- No, there is a compilation error at // Line 1
- No, there is a compilation error at // Line 2
- No, there is a compilation error at // Line 3
- No, there is a compilation error at // Line 4

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Question: [generic methods in java](#)

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Interactive Question:

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4.1.12. How can this program be modified to make use of appropriate generic...

Author: Yasser Ibrahim

How can this program be modified to make use of appropriate generic types? (one modification for each line)

```
import java.util.*;

public class Test {

    public static void main(String[] args) {
        List ids = new ArrayList(); // Line 1
        ids.add(123);
        ids.add(999);

        Map students = new HashMap(); // Line 2
        students.put("Jess",ids.get(0));
        students.put("Jimmy",ids.get(1));

        int x = ((Long)students.get("Jimmy")).intValue(); // Line 3
    }
}
```

Please choose all the answers that apply:

- replace line 1 with `List<Integer> ids = new ArrayList<Integer>();`
- replace line 1 with `List<Long> ids = new ArrayList<Long>();`
- replace line 2 with `Map<Integer,String> students = new HashMap<Integer,String>();`
- replace line 2 with `Map<String,Integer> students = new HashMap<String,Integer>();`
- replace line 3 with `int x = students.get("Jimmy");`

Check the answer of this question online at QuizOver.com:

Question: [how to declare a generic collection in java?](http://www.quizover.com/question/how-to-declare-a-generic-collection-in-java?pdf=3044)

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4.1.13. Given the following incomplete program, based on the given put stat...

Author: JavaChamp Team

Given the following incomplete program, based on the given put statements in map, what is considered a correct declaration and instantiation for map ?

```
import java.util.*;

public class Test {

    public static void main(String[] args) {

        // insert code here

        map.put(new ArrayList<Integer>(), 1);
        map.put(new ArrayList<Integer>(), 12);
        map.put(new LinkedList<Integer>(), new Integer(1));
        map.put(new LinkedList<Integer>(), new Long(1));

    }
}
```

Please choose only one answer:

- 1) Map<List<Integer>,? extends Number> map = new HashMap<List<Integer>,Number>();
- 2) Map<List<Integer>,Number> map = new HashMap<List<Integer>,Integer>();
- 3) Map<List<Integer>, Number> map = new HashMap<List<Integer>, Number>();
- 4) Map<List<Integer>,Integer> map = new HashMap<List<Integer>,Integer>();
- 5) Map<ArrayList<Integer>,Integer> map = new HashMap<ArrayList<Integer>,Integer>();
- 6) Map<List<Integer>,Long> map = new HashMap<List<Integer>,Long>();

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