

Review Questions

1. What is output by the following code? (Choose all that apply)

```
1: public class Fish {  
2:   public static void main(String[] args) {  
3:     int numFish = 4;  
4:     String fishType = "tuna";  
5:     String anotherFish = numFish + 1;  
6:     System.out.println(anotherFish + " " + fishType);  
7:     System.out.println(numFish + " " + 1);  
8:   } }
```

- A. 4 1
- B. 41
- C. 5
- D. 5 tuna
- E. 5tuna
- F. 51tuna
- G. The code does not compile.

2. Which of the following are output by this code? (Choose all that apply)

```
3: String s = "Hello";  
4: String t = new String(s);  
5: if ("Hello".equals(s)) System.out.println("one");  
6: if (t == s) System.out.println("two");  
7: if (t.equals(s)) System.out.println("three");  
8: if ("Hello" == s) System.out.println("four");  
9: if ("Hello" == t) System.out.println("five");
```

- A. one
- B. two
- C. three
- D. four
- E. five
- F. The code does not compile.

3. Which are true statements? (Choose all that apply)

- A. An immutable object can be modified.
- B. An immutable object cannot be modified.
- C. An immutable object can be garbage collected.

- D. An immutable object cannot be garbage collected.
 - E. String is immutable.
 - F. StringBuffer is immutable.
 - G. StringBuilder is immutable.
4. What is the result of the following code?
- ```
7: StringBuilder sb = new StringBuilder();
8: sb.append("aaa").insert(1, "bb").insert(4, "ccc");
9: System.out.println(sb);
```
- A. abbaaccc
  - B. abbaccca
  - C. bbaaaccc
  - D. bbaaccca
  - E. An exception is thrown.
  - F. The code does not compile.
5. What is the result of the following code?
- ```
2: String s1 = "java";
3: StringBuilder s2 = new StringBuilder("java");
4: if (s1 == s2)
5:   System.out.print("1");
6: if (s1.equals(s2))
7:   System.out.print("2");
```
- A. 1
 - B. 2
 - C. 12
 - D. No output is printed.
 - E. An exception is thrown.
 - F. The code does not compile.
6. What is the result of the following code?
- ```
public class Lion {
 public void roar(String roar1, StringBuilder roar2) {
 roar1.concat("!!!");
 roar2.append("!!!");
 }
 public static void main(String[] args) {
 String roar1 = "roar";
 StringBuilder roar2 = new StringBuilder("roar");
 new Lion().roar(roar1, roar2);
 }
}
```

```
 System.out.println(roar1 + " " + roar2);
} }
```

- A. roar roar
  - B. roar roar!!!
  - C. roar!!! roar
  - D. roar!!! roar!!!
  - E. An exception is thrown.
  - F. The code does not compile.
- 7. Which are the results of the following code? (Choose all that apply)  

```
String letters = "abcdef";
System.out.println(letters.length());
System.out.println(letters.charAt(3));
System.out.println(letters.charAt(6));
```

  - A. 5
  - B. 6
  - C. c
  - D. d
  - E. An exception is thrown.
  - F. The code does not compile.
- 8. Which are the results of the following code? (Choose all that apply)  

```
String numbers = "012345678";
System.out.println(numbers.substring(1, 3));
System.out.println(numbers.substring(7, 7));
System.out.println(numbers.substring(7));
```

  - A. 12
  - B. 123
  - C. 7
  - D. 78
  - E. A blank line.
  - F. An exception is thrown.
  - G. The code does not compile.
- 9. What is the result of the following code?  

```
3: String s = "purr";
4: s.toUpperCase();
5: s.trim();
6: s.substring(1, 3);
```

```
7: s += " two";
8: System.out.println(s.length());
```

- A. 2
- B. 4
- C. 8
- D. 10
- E. An exception is thrown.
- F. The code does not compile.

10. What is the result of the following code? (Choose all that apply)

```
13: String a = "";
14: a += 2;
15: a += 'c';
16: a += false;
17: if (a == "2cfalse") System.out.println("==");
18: if (a.equals("2cfalse")) System.out.println("equals");
```

- A. Compile error on line 14.
- B. Compile error on line 15.
- C. Compile error on line 16.
- D. Compile error on another line.
- E. ==
- F. equals
- G. An exception is thrown.

11. What is the result of the following code?

```
4: int total = 0;
5: StringBuilder letters = new StringBuilder("abcdefg");
6: total += letters.substring(1, 2).length();
7: total += letters.substring(6, 6).length();
8: total += letters.substring(6, 5).length();
9: System.out.println(total);
```

- A. 1
- B. 2
- C. 3
- D. 7
- E. An exception is thrown.
- F. The code does not compile.

- 12.** What is the result of the following code? (Choose all that apply)
- ```
StringBuilder numbers = new StringBuilder("0123456789");
numbers.delete(2, 8);
numbers.append("-").insert(2, "+");
System.out.println(numbers);
```
- A.** 01+89-
 - B.** 012+9-
 - C.** 012+-9
 - D.** 0123456789
 - E.** An exception is thrown.
 - F.** The code does not compile.
- 13.** What is the result of the following code?
- ```
StringBuilder b = "rumble";
b.append(4).deleteCharAt(3).delete(3, b.length() - 1);
System.out.println(b);
```
- A.** rum
  - B.** rum4
  - C.** rumb4
  - D.** rumble4
  - E.** An exception is thrown.
  - F.** The code does not compile.
- 14.** Which of the following can replace line 4 to print "avaJ"? (Choose all that apply)
- ```
3: StringBuilder puzzle = new StringBuilder("Java");
4: // INSERT CODE HERE
5: System.out.println(puzzle);
```
- A.** puzzle.reverse();
 - B.** puzzle.append("vaJ\$").substring(0, 4);
 - C.** puzzle.append("vaJ\$").delete(0, 3).deleteCharAt(puzzle.length() - 1);
 - D.** puzzle.append("vaJ\$").delete(0, 3).deleteCharAt(puzzle.length());
 - E.** None of the above.
- 15.** Which of these array declarations is not legal? (Choose all that apply)
- A.** `int[][] scores = new int[5][];`
 - B.** `Object[][][] cubbies = new Object[3][0][5];`
 - C.** `String beans[] = new beans[6];`
 - D.** `java.util.Date[] dates[] = new java.util.Date[2][];`
 - E.** `int[][] types = new int[];`
 - F.** `int[][] java = new int[][];`

- 16.** Which of these compile when replacing line 8? (Choose all that apply)

```
7: char[] c = new char[2];
```

```
8: // INSERT CODE HERE
```

- A.** `int length = c.capacity;`
- B.** `int length = c.capacity();`
- C.** `int length = c.length;`
- D.** `int length = c.length();`
- E.** `int length = c.size;`
- F.** `int length = c.size();`
- G.** None of the above.

- 17.** Which of these compile when replacing line 8? (Choose all that apply)

```
7: ArrayList l = new ArrayList();
```

```
8: // INSERT CODE HERE
```

- A.** `int length = l.capacity;`
- B.** `int length = l.capacity();`
- C.** `int length = l.length;`
- D.** `int length = l.length();`
- E.** `int length = l.size;`
- F.** `int length = l.size();`
- G.** None of the above.

- 18.** Which of the following are true? (Choose all that apply)

- A.** An array has a fixed size.
- B.** An `ArrayList` has a fixed size.
- C.** An array allows multiple dimensions.
- D.** An array is ordered.
- E.** An `ArrayList` is ordered.
- F.** An array is immutable.
- G.** An `ArrayList` is immutable.

- 19.** Which of the following are true? (Choose all that apply)

- A.** Two arrays with the same content are equal.
- B.** Two `ArrayLists` with the same content are equal.
- C.** If you call `remove(0)` using an empty `ArrayList` object, it will compile successfully.
- D.** If you call `remove(0)` using an empty `ArrayList` object, it will run successfully.
- E.** None of the above.

20. What is the result of the following statements?

```
6: List<String> list = new ArrayList<String>();
7: list.add("one");
8: list.add("two");
9: list.add(7);
10: for(String s : list) System.out.print(s);
```

- A.** onetwo
- B.** onetwo7
- C.** onetwo followed by an exception
- D.** Compiler error on line 9.
- E.** Compiler error on line 10.

21. What is the result of the following statements?

```
3: ArrayList<Integer> values = new ArrayList<>();
4: values.add(4);
5: values.add(5);
6: values.set(1, 6);
7: values.remove(0);
8: for (Integer v : values) System.out.print(v);
```

- A.** 4
- B.** 5
- C.** 6
- D.** 46
- E.** 45
- F.** An exception is thrown.
- G.** The code does not compile.

22. What is the result of the following?

```
int[] random = { 6, -4, 12, 0, -10 };
int x = 12;
int y = Arrays.binarySearch(random, x);
System.out.println(y);
```

- A.** 2
- B.** 4
- C.** 6
- D.** The result is undefined.
- E.** An exception is thrown.
- F.** The code does not compile.

23. What is the result of the following?

```
4: List<Integer> list = Arrays.asList(10, 4, -1, 5);
5: Collections.sort(list);
6: Integer array[] = list.toArray(new Integer[4]);
7: System.out.println(array[0]);
```

- A.** -1
- B.** 10
- C.** Compiler error on line 4.
- D.** Compiler error on line 5.
- E.** Compiler error on line 6.
- F.** An exception is thrown.

24. What is the result of the following?

```
6: String [] names = {"Tom", "Dick", "Harry"};
7: List<String> list = names.asList();
8: list.set(0, "Sue");
9: System.out.println(names[0]);
```

- A.** Sue
- B.** Tom
- C.** Compiler error on line 7.
- D.** Compiler error on line 8.
- E.** An exception is thrown.

25. What is the result of the following?

```
List<String> hex = Arrays.asList("30", "8", "3A", "FF");
Collections.sort(hex);
int x = Collections.binarySearch(hex, "8");
int y = Collections.binarySearch(hex, "3A");
int z = Collections.binarySearch(hex, "4F");
System.out.println(x + " " + y + " " + z);
```

- A.** 0 1 -2
- B.** 0 1 -3
- C.** 2 1 -2
- D.** 2 1 -3
- E.** None of the above.
- F.** The code doesn't compile.

26. Which of the following are true statements about the following code? (Choose all that apply)

```
4: List<Integer> ages = new ArrayList<>();
5: ages.add(Integer.parseInt("5"));
```



```
6: ages.add(Integer.valueOf("6"));
7: ages.add(7);
8: ages.add(null);
9: for (int age : ages) System.out.print(age);
```

- A.** The code compiles.
- B.** The code throws a runtime exception.
- C.** Exactly one of the add statements uses autoboxing.
- D.** Exactly two of the add statements use autoboxing.
- E.** Exactly three of the add statements use autoboxing.

27. What is the result of the following?

```
List<String> one = new ArrayList<String>();
one.add("abc");
List<String> two = new ArrayList<>();
two.add("abc");
if (one == two)
    System.out.println("A");
else if (one.equals(two))
    System.out.println("B");
else
    System.out.println("C");
```

- A.** A
- B.** B
- C.** C
- D.** An exception is thrown.
- E.** The code does not compile.

28. Which of the following can be inserted into the blank to create a date of June 21, 2014?
(Choose all that apply)

```
import java.time.*;
```

```
public class StartOfSummer {
```

```
    public static void main(String[] args) {
        LocalDate date = _____
    }
```

```
}
```

- A.** new LocalDate(2014, 5, 21);
- B.** new LocalDate(2014, 6, 21);
- C.** LocalDate.of(2014, 5, 21);

- D. `LocalDate.of(2014, 6, 21);`
- E. `LocalDate.of(2014, Calendar.JUNE, 21);`
- F. `LocalDate.of(2014, Month.JUNE, 21);`

29. What is the output of the following code?

```
LocalDate date = LocalDate.parse("2018-04-30", DateTimeFormatter.ISO_LOCAL_DATE);
date.plusDays(2);
date.plusHours(3);
System.out.println(date.getYear() + " " + date.getMonth() + " "
+ date.getDayOfMonth());
```

- A. 2018 APRIL 2
- B. 2018 APRIL 30
- C. 2018 MAY 2
- D. The code does not compile.
- E. A runtime exception is thrown.

30. What is the output of the following code?

```
LocalDate date = LocalDate.of(2018, Month.APRIL, 40);
System.out.println(date.getYear() + " " + date.getMonth() + " "
+ date.getDayOfMonth());
```

- A. 2018 APRIL 4
- B. 2018 APRIL 30
- C. 2018 MAY 10
- D. Another date.
- E. The code does not compile.
- F. A runtime exception is thrown.

31. What is the output of the following code?

```
LocalDate date = LocalDate.of(2018, Month.APRIL, 30);
date.plusDays(2);
date.plusYears(3);
System.out.println(date.getYear() + " " + date.getMonth() + " "
+ date.getDayOfMonth());
```

- A. 2018 APRIL 2
- B. 2018 APRIL 30
- C. 2018 MAY 2
- D. 2021 APRIL 2

- E. 2021 APRIL 30
- F. 2021 MAY 2
- G. A runtime exception is thrown.

32. What is the output of the following code?

```
LocalDateTime d = LocalDateTime.of(2015, 5, 10, 11, 22, 33);  
Period p = Period.of(1, 2, 3);  
d = d.minus(p);  
DateTimeFormatter f = DateTimeFormatter.ofLocalizedTime(FormatStyle.SHORT);  
System.out.println(d.format(f));
```

- A. 3/7/14 11:22 AM
- B. 5/10/15 11:22 AM
- C. 3/7/14
- D. 5/10/15
- E. 11:22 AM
- F. The code does not compile.
- G. A runtime exception is thrown.

33. What is the output of the following code?

```
LocalDateTime d = LocalDateTime.of(2015, 5, 10, 11, 22, 33);  
Period p = Period.ofDays(1).ofYears(2);  
d = d.minus(p);  
DateTimeFormatter f = DateTimeFormatter.ofLocalizedDateTime(FormatStyle.SHORT);  
System.out.println(f.format(d));
```

- A. 5/9/13 11:22 AM
- B. 5/10/13 11:22 AM
- C. 5/9/14
- D. 5/10/14
- E. The code does not compile.
- F. A runtime exception is thrown.