socrative

Answer Key
February 24, 2021

OCA Final Assessment pt. 2 of 2 ('Copy')

1.

```
import java.util.*;
public class Museums {
   public static void main(String[] args) {
      String[] array = {"Natural History", "Science", "Art"};
      List<String> museums = Arrays.asList(array);
      museums.remove(2);
      System.out.println(museums);
   }
}
```

What is the result of the following?

- A [Natural History, Science]
- B [Natural History, Science, Art]
- C The code does not compile.
- ✓ D The code compiles but throws an exception at runtime.

2.

```
public class Underscores {
   public String name = "Sherrin";
   public void massage() {
      int zip = 10017;
   }
}
```

Which of the following substitutions will compile? (Choose two.)

- ✓ A Change name to _name
- B Change 10017 to _10017
- C Change 10017 to 10017_
- ✓ D Change 10017 to 10_0_17
- E Change int to _int

3.

```
package counting;
import java.util.*;
public class Binary {

   public static void main(String[] args) {
      args = new String[] {"0", "1", "01", "10" };

      Arrays.sort(args);
      System.out.println(Arrays.toString(args));
   }
}
```

What is the result of the following when called as java counting.Binary?

- A []
- ✓ B [0, 01, 1, 10]
- C [0, 01, 10, 1]
- D [0, 1, 01, 10]
- E The code does not compile.
- F The code compiles but throws an exception at runtime.

4. Using the _____ and _____ modifiers together allows a variable to be accessed from any class, without requiring an instance variable.

- A final, package-private
- B class, static
- C protected, instance
- ✓ D public, static
- E default, public

5.

```
import java.util.*;
public class Exams {
   public static void main(String[] args) {
      List<String> exams = Arrays.asList("OCA", "OCP");
      for (String e1 : exams)
         for (String e2 : exams)
            System.out.print(e1 + " " + e2);
            System.out.println();
   }
}
```

How many lines does the following code output?

- ✓ A One
- B Four
- C Five
- D The code does not compile.
- E The code compiles but throws an exception at runtime.

6. Which of the following are true statements? (Choose two.)

- A The javac command compiles a source text file into a set of machine instructions.
- B The java command compiles a .class file into a .java file.
- ✓ C The javac command compiles a .java file into a .class file.
- ✓ D The javac command compiles a source text file into a bytecode file.
- E The java command compiles a .java file into a .class file.
- F The javac command compiles a .class file into a .java file.

7.

```
char one = Integer.parseInt("1");
Character two = Integer.parseInt("2");
int three = Integer.parseInt("3");
Integer four = Integer.parseInt("4");
short five = Integer.parseInt("5");
Short six = Integer.parseInt("6");
```

How many of the following lines of code compile?

- A None
- B One
- ✓ C Two
- D Three
- E Four
- F Five

8.

```
public class Highway {
   public int drive(long car) { return 2; }
   public int drive(double car) { return 3; }
   public int drive(int car) { return 5; }
   public int drive(short car) { return 3; }
   public static void main(String[] gears) {
      ______ value = 5;
      System.out.print(new Highway().drive(value));
   }
}
```

Given the application below, what data types can be inserted into the blank that would allow the code to print 3? (Choose three.)

- A boolean
- ✓ B short
- C int
- ✓ D byte
- E long
- ✓ F float

9.

```
import java.time.*;
public class Equality {
   public void main(String[] args) {
      System.out.println(new StringBuilder("zelda")
          == new StringBuilder("zelda"));
      System.out.println(3 == 3);
      System.out.println("bart" == "bart");
      System.out.println(new int[0] == new int[0]);
      System.out.println(LocalTime.now() == LocalTime.now());
   }
}
```

How many times does this code print true?

✓ **A** None

B One

C Two

D Three

E The code does not compile.

10.

```
package ballroom;
public class Dance {
   public static void swing(int... beats) throws ClassCastException {
      try {
         System.out.print("1"+beats[2]);  // p1
      } catch (RuntimeException e) {
         System.out.print("2");
      } catch (Exception e) {
         System.out.print("3");
      } finally {
         System.out.print("4");
      }
   }
   public static void main(String... music) {
      new Dance().swing(0,0);  // p2
      System.out.print("5");
   }
}
```

What is the output of the following application?

A 145

B 1045

C 24, followed by a stack trace

✓ **D** 245

E The code does not compile because of line p1.

F The code does not compile because of line p2.

11.

```
List<String> drinks = Arrays.asList("can", "cup");
for (int container = drinks.size(); container > 0; container++) {
   System.out.print(drinks.get(container-1) + ",");
}
```

What is the output of the following?

A can,cup,

B cup,can,

C The code does not compile.

D This is an infinite loop.

✓ **E** The code compiles but throws an exception at runtime.

12. Which of the following method signatures are valid declarations of an entry point in a Java application? (Choose three.)

- ✓ **A** public static void main(String... widgets)
- **B** public static void main(String sprockets)
- **C** protected static void main(String[] args)
- **D** public static int void main(String[] arg)
- ✓ **E** public static final void main(String []a)
- ✓ **F** public static void main(String[] data)

13. Given the application below and the choices available, which lines must all be removed to allow the code to compile? (Choose three.)

```
1:  package year;
2:  public class Seasons {
3:     public static void main(String[] time) {
4:        final long winter = 10;
5:        final byte season = 2;
6:        int fall = 4;
7:        final short summer = 3;
8:        switch(season) {
9:           case 1:
10:          case winter: System.out.print("winter");
11:          default:
12:          case fall: System.out.print("fall");
13:          case summer: System.out.print("summer");
14:          default:
15:       }
16:    }
17: }
```

- **A** Line 8
- **B** Line 9
- ✓ **C** Line 10
- ✓ **D** Line 11
- ✓ **E** Line 12
- **F** Line 13

14. Given the application below, which lines do not compile? (Choose three.)

```
package furryfriends;
interface Friend {
   protected String getName();  // h1
}
class Cat implements Friend {
   String getName() {  // h2
      return "Kitty";
   }
}
public class Dog implements Friend {
   String getName() throws RuntimeException {  // h3
      return "Doggy";
   }
   public static void main(String[] adoption) {
      Friend friend = new Dog();  // h4
      System.out.print(((Cat)friend).getName());  // h5
      System.out.print(((Dog)null).getName());  // h6
   }
}
```

- ✓ **A** Line h1
- ✓ **B** Line h2
- ✓ **C** Line h3
- **D** Line h4
- **E** Line h5
- **F** Line h6

15. Which of the following are unchecked exceptions? (Choose three.)

- **A** FileNotFoundException
- ✓ **B** ArithmeticException
- **C** IOException
- **D** Exception
- ✓ **E** IllegalArgumentException
- ✓ **F** RuntimeException

16.

```
package ranch;
public class Cowboy {
   private int space = 5;
   private double ship = space < 2 ? 1 : 10;  // g1
   public void printMessage() {
      if(ship>1) {
         System.out.println("Goodbye");
      } if(ship<10 && space>=2) System.out.println("Hello");  // g2
      else System.out.println("See you again");
   }
   public static final void main(String... stars) {
      new Cowboy().printMessage();
   }
}
```

What is the result of compiling and executing the following application?

- **A** It only prints Hello.
- **B** It only prints Goodbye.
- **C** It only prints See you again.
- **D** It does not compile because of line g1.
- **E** It does not compile because of line g2.
- ✓ **F** None of the above.

17.

```
package wake;
public class Alarm {
   ________ static int clock;
   ________ long getTime() {return clock;}
}

package wake;
public class Coffee {
   private boolean bringCoffee() { return new Alarm().clock<10;}
}

package sleep;
public class Snooze extends wake.Alarm {
   private boolean checkTime() { return getTime()>10;}
}
```

Given the following three class declarations, which sets of access modifiers can be inserted, in order, into the blank lines below that would allow all of the classes to compile? (Choose three.)

- **A** protected and package-private (blank)
- ✓ **B** public and public
- ✓ **C** package-private (blank) and protected
- ✓ **D** protected and protected
- **E** private and public
- **F** package-private (blank) and package-private (blank)

18. Given that FileNotFoundException is a subclass of IOException and Long is a subclass of Number, what is the output of the following application?

```
package materials;

import java.io.*;

class CarbonStructure {
    protected long count;
    public abstract Number getCount() throws IOException;  // q1
    public CarbonStructure(int count) { this.count = count; }
}
public class Diamond extends CarbonStructure {
   public Diamond() { super(15); }
   public Long getCount() throws FileNotFoundException {  // q2
      return count;
   }
   public static void main(String[] cost) {
      try {
         final CarbonStructure ring = new Diamond();  // q3
         System.out.print(ring.getCount());  // q4
      } catch (IOException e) {
         e.printStackTrace();
      }
   }
}
```

A 15

✓ B It does not compile because of line q1.

C It does not compile because of line q2.

D It does not compile because of line q3.

E It does not compile because of line q4.

F It compiles but throws an exception at runtime.

19.

```
1:  import java.time.*;
2:  import java.time.format.*;
3:
4:  public class HowLong {
5:     public void main(String h) {
6:        LocalDate newYears = new LocalDate(2017, 1, 1);
7:        Period period = Period.ofYears(1).ofDays(1);
8:        DateTimeFormat format = DateTimeFormat.ofPattern("MM-dd-yyyy");
9:        System.out.print(format.format(newYears.minus(period)));
10:    }
11: }
```

How many lines contain a compile error?

A None

B One

✓ C Two

D Three

E Four

F Five

20. Which of the following statements about try-catch blocks are correct? (Choose two.)

✓ A A catch block can never appear after a finally block.

B A try block must be followed by a catch block.

C A finally block can never appear after a catch block.

D A try block must be followed by a finally block.

✓ E A try block can have zero or more catch blocks.

F A try block can have zero or more finally blocks.

21.

```
int fish = 1 + 2 * 5>=2 ? 4 : 2;
int mammals = 3 < 3 ? 1 : 5>=5 ? 9 : 7;
System.out.print(fish+mammals+"");
```

What is printed by the following code snippet?

- A 49
- ✓ B 13
- C 18
- D 99
- E It does not compile.

22. Which of the following statements about objects, reference types, and casting are correct? (Choose three.)

- ✓ A An object can be assigned to an inherited interface reference variable without an explicit cast.
- B The compiler can prevent all explicit casts that lead to an exception at runtime.
- ✓ C Casting an object to a reference variable does not modify the object in memory.
- D An object can be assigned to a subclass reference variable without an explicit cast.
- ✓ E An object can be assigned to a superclass reference variable without an explicit cast.
- F An implicit cast of an object to one of its inherited types can sometimes lead to a ClassCastException at runtime.

23.

```
package unix;

import java.util.*;

public class EchoFirst {

   public static void main(String[] args) {
      int result = Arrays.binarySearch(args, args[0]);
      System.out.println(result);
   }
}
```

What is the output of the following when run as java EchoFirst seed flower plant?

- A 0
- B 1
- C 2
- D The code does not compile.
- E The code compiles but throws an exception at runtime.
- ✓ F The output is not guaranteed.

24. How many objects are eligible for garbage collection at the end of the main() method?

```
package store;
public class Shoes {

   static String shoe1 = new String("sandal");
   static String shoe2 = new String("flip flop");

   public static void shopping() {
      String shoe3 = new String("croc");
      shoe2 = shoe1;
      shoe1 = shoe3;
   }

   public static void main(String... args) {
      shopping();
   }
}
```

- A None
- ✓ B One
- C Two
- D Three
- E The code does not compile.

25. The _____ keyword is used in method declarations, the _____ keyword is used to guarantee a statement will execute even if an exception is thrown, and the _____ keyword is used to throw an exception to the surrounding process.

- A throw, finally, throws
- B throws, catch, throw
- C catch, finally, throw
- D finally, catch, throw
- ✓ E throws, finally, throw

26.

```
package nyc;
public class TouristBus {

  public static void main(String... args) {
     String[] nycTourLoops = new String[] { "Downtown", "Uptown", "Brooklyn" };
     String[] times = new String[] { "Day", "Night" };
        for (int i = 0, j = 0; i < nycTourLoops.length; i++, j++)
           System.out.println(nycTourLoops[i] + " " + times[j]);
  }
}
```

Which statements best describe the result of this code? (Choose two.)

- A The println causes one line of output.
- ✓ B The println causes two lines of output.
- C The println causes three lines of output.
- D The code terminates successfully.
- ✓ E The code throws an exception at runtime.

27. Because of _____, it is possible to _____ a method, which allows Java to support _____.

- A abstract methods, override, inheritance
- B concrete methods, overload, inheritance
- C virtual methods, overload, interfaces
- D inheritance, abstract, polymorphism
- ✓ E virtual methods, override, polymorphism.

28.

```
package calendar;
public class Seasons {

   public static void seasons(String... names) {
      int l = names[1].length();        // s1
      System.out.println(names[l]);     // s2
   }

    public static void main(String[] args) {
       seasons("Summer", "Fall", "Winter", "Spring");
    }
}
```

What is the result of the following?

- A Fall
- B Spring
- C The code does not compile.
- D The code throws an exception on line s1.
- ✓ E The code throws an exception on line s2.

29. How many lines of the following application contain compilation errors?

```
1:  package percussion;
2:
3:  interface MakesNoise {}
4:  abstract class Instrument implements MakesNoise {
5:     public Instrument(int beats) {}
6:     public void play() {}
7:  }
8:  public class Drum extends Instrument {
9:     public void play(int count) {}
10:    public void concert() {
11:       super.play(5);
12:    }
13:    public static void main(String[] beats) {
14:       MakesNoise mn = new Drum();
15:       mn.concert();
16:    }
17: }
```

- A None. The code compiles and runs without issue.
- B One
- C Two
- ✓ D Three
- E Four

30.

```
package fly;
public class Helicopter {
   public int adjustPropellers(int length, String[] type) {
      length++;
      type[0] = "LONG";
      return length;
   }
   public static void main(String[] climb) {
      final Helicopter h = new Helicopter();
      int length = 5;
      String[] type = new String[1];
      length = h.adjustPropellers(length, type);
      System.out.print(length+","+type[0]);
   }
}
```

What is the output of the following application?

- A 5,LONG
- ✓ B 6,LONG
- C 5,null
- D 6,null
- E The code does not compile.
- F The code compiles but throws an exception at runtime.

31. How many lines of the following application do not compile?

```
package castles;
class OpenDoorException extends Exception {}
class CableSnapException extends OpenDoorException {}
public class Palace {
   public void openDrawbridge() throws Exception {
      try {
         throw new Exception("Problem");
      } catch (OpenDoorException e) {
         throw new OpenDoorException();
      } catch (CableSnapException ex) {
         try {
            throw new OpenDoorException();
         } catch (Exception ex) {
         } finally {
            System.out.println("Almost done");
         }
      } finally {
         throw new RuntimeException("Unending problem");
      }
   }
   public static void main(String[] moat) throws IllegalArgumentException {
      new Palace().openDrawbridge();
   }
}
```

A None. The code compiles and produces a stack trace at runtime.

B One

C Two

✓ D Three

E Four

F Five

32. Choose the best answer: _____ and _____ are two properties that go hand in hand to improve class design by structuring a class with related attributes and actions while protecting the underlying data from access by other classes.

A Optimization and platform independence

B Platform independence and encapsulation

C Platform independence and inheritance

✓ D Object orientation and encapsulation

E Inheritance and polymorphism

33.

```
string bike1 = "speedy";
string bike2 = new String("speedy");
boolean test1 = bike1 == bike2;
boolean test2 = bike1.equals(bike2);
System.out.println(test1 + " " + test2);
```

What is the output of the following?

A false false

B false true

C true false

D true true

✓ E The code does not compile.

F The code compiles but throws an exception at runtime.

34.

```
package unix;

import java.util.*;

public class EchoFirst {

   public static void main(String[] args) {
      Arrays.sort(args);
      int result = Arrays.binarySearch(args, args[0]);
      System.out.println(result);
   }
}
```

What is the output of the following when run as java EchoFirst seed flower plant?

✓ **A** 0

B 1

C 2

D The code does not compile.

E The code compiles but throws an exception at runtime.

F The output is not guaranteed.

35. Which are true statements? (Choose three.)

A Every do-while loop can be rewritten as a for-each loop.

✓ **B** Every for-each loop can be rewritten as a do-while loop.

✓ **C** Every for-each loop can be rewritten as a traditional for loop.

✓ **D** Every for-each loop can be rewritten as a while loop.

E Every traditional for loop can be rewritten as a for-each loop.

F Every while loop can be rewritten as a for-each loop.

36.

```
import java.time.*;
public class OnePlusOne {
   public static void main(String... nums) {
     LocalDate time = LocalDate.of(1, 11);
     while (time.getHour() < 1) {
        time.plusHours(1);
        System.out.println("in loop");
     }
   }
}
```

How many lines does this program print?

A None

B One

C Two

D This is an infinite loop.

✓ **E** The code does not compile.

37.

```
public class Tennis {
   public static void main(String[] game) {
      String[] balls = new String[1];
      int[] scores = new int[1];
      balls = null;
      scores = null;
   }
}
```

How many objects are eligible for garbage collection immediately before the end of the main() method?

- A None
- B One
- ✓ C Two
- D Three
- E Four

38.

```
14: int count = 0;
15: LocalDate date = LocalDate.of(2017, Month.JANUARY, 1);
16: while (date.getMonth() != Month.APRIL)
17:    date = date.minusMonths(1);
18:    count++;
19: System.out.println(count);
```

What is the output of the following?

- A 0
- ✓ B 1
- C 3
- D 9
- E This is an infinite loop.
- F The code does not compile.

39. How many lines of the following class do not compile?

- A None, the class compiles without issue.
- B One
- C Two
- ✓ D Three
- E Four
- F Five

```
1:  package arctic;
2:  abstract class Bear {
3:     protected int sing;
4:     protected abstract int grunt();
5:     int sing() {
6:        return sing;
7:     }
8:  }
9:  public class PolarBear extends Bear {
10:    int grunt() {
11:       sing() += 10;
12:       return super.grunt()+1;
13:       return 10;
14:    }
15: }
```

40. In which places is the default keyword permitted to be used? (Choose two)

- A Access modifier in a class
- ✓ B Execution path in a switch statement
- C Method name
- D Modifier in an abstract interface method
- ✓ E Modifier in an interface method with a body
- F Variable name