Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

1. Which of the following correctly defines a queue?

   Mark for Review
   (1) Points

   ○ a list of elements with a first in last out order.
   ○ a list of elements with a first in first out order. (*)
   ◉ something that enables you to create a generic class without specifying a type between angle brackets <>.
   ○ it is a keyword in Java that restrict the use of the code to local users only.

   ❌ Incorrect. Refer to Section 3 Lesson 2.

2. A HashSet is a set that is similar to an ArrayList. A HashSet does not have any specific ordering. True or false?

   Mark for Review
   (1) Points

   ◉ True (*)
   ○ False

   ✔ Correct

3. Which of the following correctly initializes an object named cell of the class Telephones whose generic type is Cellular?

   Mark for Review
   (1) Points

   ○ Telephones cell = new Telephones(Cellular c);
   ◉ Telephones(Cellular) cell = new Telephones(Cellular);
   ○ Telephones<> cell = new Telephones<>(Cellular c);
   ○ Telephones cell = new Telephones(); (*)
   ○ None of the above.

   ❌ Incorrect. Refer to Section 3 Lesson 2.

4. What is a set?

   Mark for Review
   (1) Points

   ◉ something that enables you to create a generic class without specifying a type between angle brackets <>.
   ○ a collection of elements that does not contain duplicates. (*)
   ○ a keyword in Java that initializes an ArrayList.
   ○ a collection of elements that contains duplicates.

   ❌ Incorrect. Refer to Section 3 Lesson 2.

5. A LinkedList is a list of elements that is dynamically stored. True or false?

   Mark for Review
   (1) Points

   ◉ True (*)
   ○ False

   ✔ Correct

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Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

6. When would an enum (or enumeration) be used?

Mark for Review
(1) Points

○ When you want to be able to create any number of objects of that class.
○ When you wish to initialize a HashSet.
◉ When you wish to remove data from memory.
○ When you already know all the possibilities for objects of that class. (*)

❌ Incorrect. Refer to Section 3 Lesson 2.

7. Which scenario best describes a stack?

Mark for Review
(1) Points

○ A pile of pancakes with which you add some to the top and remove them one by one from the top to the bottom. (*)
○ A row of books that you can take out of only the middle of the books first and work your way outward toward either edge.
◉ A line at the grocery store where the first person in the line is the first person to leave.
○ All of the above describe a stack.

❌ Incorrect. Refer to Section 3 Lesson 2.

8. Which of the following methods adds a Key-Value map to a HashMap?

Mark for Review
(1) Points

○ put(Key, Value) (*)
○ add(Key, Value)
◉ get(Key, Value)
○ remove(Key, Value)

❌ Incorrect. Refer to Section 3 Lesson 2.

9. What are maps that link a Key to a Value?

Mark for Review
(1) Points

○ Arrays
◉ ArrayLists
○ HashSets
○ HashMaps (*)

❌ Incorrect. Refer to Section 3 Lesson 2.

10. These are a list of elements that have a first in last out ordering.

Mark for Review
(1) Points

○ Arrays
◉ Stacks (*)
○ HashMaps
○ Enums

✔ Correct

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Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

11. Which of the following correctly initializes a generic class Telephones with one generic type Type1? ☐ Mark for Review
(1) Points

- ○ public class Telephones(Type1 T){//code here}
- ○ public class Telephones {//code here}
- ○ public class Telephones {//code here}
- ◉ public class Telephones(Type1) {//code here}
- ○ None of the above. (*)

❌ Incorrect. Refer to Section 3 Lesson 2.

12. Why can a LinkList be considered a stack and a queue? ☐ Mark for Review
(1) Points

(Choose all correct answers)

- ☐ Because you can add elements to the end of it. (*)
- ☑ Because you can add element to the beginning of it. (*)
- ☐ Because you can remove elements from the end of it. (*)
- ☑ Because you can remove elements from the beginning of it. (*)

❌ Incorrect. Refer to Section 3 Lesson 2.

13. Which scenario best describes a queue? ☐ Mark for Review
(1) Points

- ○ A pile of pancakes with which you add some to the top and remove them one by one from the top to the bottom.
- ◉ A row of books that you can take out of only the middle of the books first and work your way outward toward either edge.
- ○ A line at the grocery store where the first person in the line is the first person to leave. (*)
- ○ All of the above describe a queue.

❌ Incorrect. Refer to Section 3 Lesson 2.

14. Classes define and implement what? ☐ Mark for Review
(1) Points

- ○ some methods with implementations
- ○ all methods with implementations
- ◉ all method definitions without any implementations
- ○ variables and methods (*)
- ○ constants and all methods with implementations

❌ Incorrect. Refer to Section 3 Lesson 1.

15. Abstract classes define what? ☐ Mark for Review
(1) Points

- ○ some methods with implementations (*)
- ○ all methods with implementations
- ◉ all method definitions without any implementations
- ○ variables and methods
- ○ constants and all methods with implementations

❌ Incorrect. Refer to Section 3 Lesson 1.

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Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

16. Virtual method invocation occurs when you call a superclass method for a subclass with an overriding method of the same name.
True or false?

☐ Mark for Review
(1) Points

⦿ True (*)
◯ False

✔️ Correct

17. The instanceof operator only works with class instances.
True or false?

☐ Mark for Review
(1) Points

⦿ True (*)
◯ False

✔️ Correct

18. A downward cast of a subclass lets you access a subclass specialized method call.
True or false?

☐ Mark for Review
(1) Points

⦿ True (*)
◯ False

✔️ Correct

19. Classes can be made immutable by placing a final key word before all method implementations.
True or false?

☐ Mark for Review
(1) Points

⦿ True (*)
◯ False

✔️ Correct

20. Virtual method invocation occurs when you call a method from a superclass.
True or false?

☐ Mark for Review
(1) Points

⦿ True
◯ False (*)

❌ Incorrect. Refer to Section 3 Lesson 1.

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

21. The instanceof operator works with class instances and primitive data types.
True or false?

☐ Mark for Review
(1) Points

◉ True
○ False (*)

❌ Incorrect. Refer to Section 3 Lesson 1.

22. A method with public access can be subclassed.
True or false?

☐ Mark for Review
(1) Points

◉ True
○ False (*)

❌ Incorrect. Refer to Section 3 Lesson 1.

23. A method with public access level can be subclassed by?

☐ Mark for Review
(1) Points

○ Only a subclass in the same package
◉ A subclass in any package
○ A static nested class
○ An instance nested class
○ None of the above. We cannot subclass a method in Java. (*)

❌ Incorrect. Refer to Section 3 Lesson 1.

24. A upward cast means all instance variables of the subclass are permanently lost to the instance.
True or false?

☐ Mark for Review
(1) Points

◉ True
○ False (*)

❌ Incorrect. Refer to Section 3 Lesson 1.

25. Modeling business problems requires understanding the interaction between interfaces, abstract and concrete classes, subclasses, and enum classes.
True or false?

☐ Mark for Review
(1) Points

◉ True (*)
○ False

✔️ Correct

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Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

26. Upward casting an object instance means you can't access subclass specific methods.
    True or false?

    ☐ Mark for Review
    (1) Points

    ⦿ True (*)
    ⦾ False

    ✔️ Correct

27. The Files class provides a instance method that creates a new BufferedReader.
    True or false?

    ☐ Mark for Review
    (1) Points

    ⦾ True (*)
    ⦿ False

    ❌ Incorrect. Refer to Section 3 Lesson 5.

28. Serialized classes are less flexible to change than non-serialized classes.
    True or false?

    ☐ Mark for Review
    (1) Points

    ⦿ True
    ⦾ False (*)

    ❌ Incorrect. Refer to Section 3 Lesson 5.

29. The BufferedOutputStream is a direct subclass of what other class?

    ☐ Mark for Review
    (1) Points

    ⦾ FilterOutputStream (*)
    ⦿ OutputStream
    ⦾ PrintStream
    ⦾ DigestOutputStream
    ⦾ ObjectOutputStream

    ❌ Incorrect. Refer to Section 3 Lesson 5.

30. The System.in is what type of stream?

    ☐ Mark for Review
    (1) Points

    ⦾ A BufferedWriter stream
    ⦾ A PrintStream
    ⦿ An InputStream (*)
    ⦾ A BufferedReader stream
    ⦾ A Reader stream

    ✔️ Correct

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

31. The java.io package has problems with missing operations, like copy, move, and such.
    True or false?

    ☑ Mark for Review
    (1) Points

    ◉ True (*)
    ○ False

    ✔ Correct

32. The serialize() method writes a serialized object.
    True or false?

    ☑ Mark for Review
    (1) Points

    ◉ True
    ○ False (*)

    ✖ Incorrect. Refer to Section 3 Lesson 5.

33. The java.nio.file package has improved exception handling.
    True or false?

    ☑ Mark for Review
    (1) Points

    ◉ True (*)
    ○ False

    ✔ Correct

34. The Files class performs which of the following?

    ☑ Mark for Review
    (1) Points

    ○ navigate the file system
    ○ create files (*)
    ◉ works with relative paths
    ○ works with absolute paths
    ○ works across disk volumes

    ✖ Incorrect. Refer to Section 3 Lesson 5.

35. What symbol is used to separate multiple exceptions in one catch statement?

    ☑ Mark for Review
    (1) Points

    ○ &&
    ◉ (==) (equals equals)
    ○ None, multiple exceptions can't be handled in one catch statement.
    ○ A single bar: | (*)

    ✖ Incorrect. Refer to Section 3 Lesson 4.

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Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

36. When do you use try-catch statements?

⊙ Mark for Review
(1) Points

○ When you want to exit your code before an exception is caught.
◉ If you want to switch different values for a certain variable.
○ When you want to handle an exception. (*)
○ Every time you would like to assign a new value to a variable that is being asserted.

❌ Incorrect. Refer to Section 3 Lesson 4.

37. The finally clause only executes when an exception is not caught and thrown.
True or false?

⊙ Mark for Review
(1) Points

◉ True
○ False (*)

❌ Incorrect. Refer to Section 3 Lesson 4.

38. Methods can not throw exceptions.
True or false?

⊙ Mark for Review
(1) Points

◉ True
○ False (*)

❌ Incorrect. Refer to Section 3 Lesson 4.

39. Assertions are boolean statements to test and debug your programs.
True or false?

⊙ Mark for Review
(1) Points

◉ True (*)
○ False

✔️ Correct

40. In what order do multiple catch statements execute?

⊙ Mark for Review
(1) Points

◉ The order they are declared in (most specific first) (*)
○ They all execute at the same time
○ They order they are declared in (most general first)
○ None of them execute since you can't have multiple catch statements.

✔️ Correct

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

41. When is the proper time to use exceptions?

⊙ Mark for Review
(1) Points

    ○ When you want to print statements to the screen.
    ○ When you want to efficiently and reliably debug your program. (*)
    ⦿ If you purposefully put errors in your code you wish to handle.
    ○ Every time a new method is called.

    ❌ Incorrect. Refer to Section 3 Lesson 4.

42. When should you not use assertions?

⊙ Mark for Review
(1) Points

(Choose all correct answers)

    ☐ When you want your program to execute efficiently
    ☑ When you want to check the values of parameters. (*)
    ☐ When you call methods that may cause side effects in your assertion check. (*)
    ☑ When you believe you have no bugs in your code.

    ❌ Incorrect. Refer to Section 3 Lesson 4.

43. Multiple exceptions can be caught in one catch statement.
True or false?

⊙ Mark for Review
(1) Points

    ⦿ True (*)
    ○ False

    ✅ Correct

44. What is the function of the asterisk (*) in regular expressions?

⊙ Mark for Review
(1) Points

    ○ The asterisk has no function in regular expressions.
    ⦿ Indicates that the preceding character may occur 1 or more times in a proper match.
    ○ Indicates that the preceding character may occur 0 or 1 times in a proper match.
    ○ Indicates that the preceding character may occur 0 or more times in a proper match. (*)

    ❌ Incorrect. Refer to Section 3 Lesson 3.

45. Consider that you are writing a program for analyzing feedback on the video game you have developed. You have completed everything except the segment of code that checks that the user's input, String userI, is a valid rating. Note that a valid rating is a single digit between 1 and 5 inclusive. Which of the following segments of code returns true if the user's input is a valid rating?

⊙ Mark for Review
(1) Points

(Choose all correct answers)

    ☑ return userI.matches("[1-5]"); (*)

    ☐ return userI.matches("{1-5}");

    ☑ return userI.matches("[1-5].*");

    ☐ return userI.matches("[1-5]{1}"); (*)

    ❌ Incorrect. Refer to Section 3 Lesson 3.

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

46. Matcher has a find method that checks if the specified pattern exists as a sub-string of the string being matched.
    True or false?

    ☉ True (*)
    ○ False

    ✔ Correct

☐ Mark for Review
(1) Points

47. Which of the following does not correctly match the regular expression symbol to its proper function?

    ○ "{x}" means there must be x occurrences of the preceding character in the string to be a match.
    ○ "?" means there may be zero or one occurrences of the preceding character in the string to be a match.
    ☉ "+" means there may be zero or more occurrences of the preceding character in the string to be a match. (*)
    ○ "{x,}" means there may be x or more occurrences of the preceeding character in the string to be a match.
    ○ "{x,y}" means there may be between x and y occurrences of the preceding character in the string to be a match.

    ✔ Correct

☐ Mark for Review
(1) Points

48. Square brackets are a representation for any character in regular expressions "[ ]".
    True or false?

    ☉ True
    ○ False (*)

    ✖ Incorrect. Refer to Section 3 Lesson 3.

☐ Mark for Review
(1) Points

49. The following code correctly initializes a pattern with the regular expression "[0-9]{2}/[0-9]{2}/[0-9]{2}".
    Pattern dateP = Pattern.compile("[0-9]{2}/[0-9]{2}/[0-9]{2}");
    True or false?

    ☉ True (*)
    ○ False

    ✔ Correct

☐ Mark for Review
(1) Points

50. What is the correct explanation of when this code will return true? return str.matches(".*[0-9]{6}.*");

    ○ Any time that str contains two dots.
    ○ Any time that str contains a sequence of 6 digits. (*)
    ☉ Any time that str has between zero and nine characters followed by a 6.
    ○ Any time str contains a 6.
    ○ Always.

    ✖ Incorrect. Refer to Section 3 Lesson 3.

☐ Mark for Review
(1) Points

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

1. Which of the following methods for the String class take a regular expression as a parameter and returns true if the string matches the expression?

   ☑ equals(String regex)
   ○ equalsIgnoreCase(String regex)
   ○ compareTo(String regex)
   ○ matches(String regex) (*)

   ❌ Incorrect. Refer to Section 3 Lesson 3.

   Mark for Review
   (1) Points

2. Which of the following methods are specific to StringBuilders?

   ○ append
   ○ delete
   ○ inssert
   ○ replace
   ☑ All of the above. (*)

   ✔ Correct

   Mark for Review
   (1) Points

3. Which of the following methods can be used to replace a segment in a string with a new string?

   ○ remove(String oldString, String newString)
   ☑ replaceAll(String oldString, String newString) (*)
   ○ replaceAll(String newString)
   ○ substring(int start, int end, String newString)
   ○ None of the above. There is no replaceAll(String newString) method with one argument.

   ✔ Correct

   Mark for Review
   (1) Points

4. Which of the following does not correctly match the regular expression symbol to its proper function?

   ☑ "{x}" means there must be x occurrences of the preceding character in the string to be a match.
   ○ "?" means there may be zero or one occurrences of the preceding character in the string to be a match.
   ○ "+" means there may be zero or more occurrences of the preceding character in the string to be a match. (*)
   ○ "{x,}" means there may be x or more occurrences of the preceeding character in the string to be a match.
   ○ "{x,y}" means there may be between x and y occurrences of the preceding character in the string to be a match.

   ❌ Incorrect. Refer to Section 3 Lesson 3.

   Mark for Review
   (1) Points

5. Split is a method for Strings that parses a string by a specified character, or, if unspecified, by spaces, and returns the parsed elements in an array of Strings.
   True or false?

   ☑ True
   ○ False (*)

   ❌ Incorrect. Refer to Section 3 Lesson 3.

   Mark for Review
   (1) Points

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

6. Matcher has a find method that checks if the specified pattern exists as a sub-string of the string being matched.
   True or false?

   ☐ Mark for Review
   (1) Points

   ◉ True (*)
   ○ False

   ✔ Correct

7. Consider that you are making a calendar and decide to write a segment of code that returns true if the string month is April, May, June, or July. Which code segment correctly implements use of regular expressions to complete this task?

   ☐ Mark for Review
   (1) Points

   ○ return month.matches("April|May|June|July"); (*)
   ○ return month.substring(0,3);
   ◉ return month.compareTo("April, May, June, July");
   ○ return month.equals("April, May, June, July");
   ○ return month.matches("April"|"May"|"June"|"July");

   ✖ Incorrect. Refer to Section 3 Lesson 3.

8. The System.in is what type of stream?

   ☐ Mark for Review
   (1) Points

   ○ A BufferedWriter stream
   ○ A PrintStream
   ◉ An InputStream (*)
   ○ A BufferedReader stream
   ○ A Reader stream

   ✔ Correct

9. The System.out is what type of stream?

   ☐ Mark for Review
   (1) Points

   ○ A BufferedWriter stream
   ◉ A PrintStream (*)
   ○ A BufferedReader stream
   ○ An OutputStream
   ○ A Reader stream

   ✔ Correct

10. The Paths class provides a static get() method to find a valid Path.
    True or false?

    ☐ Mark for Review
    (1) Points

    ◉ True (*)
    ○ False

    ✔ Correct

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

11. The System.err writes standard output to the console.
True or false?

☐ Mark for Review
(1) Points

- ◉ True (*)
- ○ False

  ✔ Correct

12. You can read input by character or line.
True or false?

☐ Mark for Review
(1) Points

- ◉ True (*)
- ○ False

  ✔ Correct

13. The java.nio.file package has improved exception handling.
True or false?

☐ Mark for Review
(1) Points

- ◉ True (*)
- ○ False

  ✔ Correct

14. The serialize() method writes a serialized object.
True or false?

☐ Mark for Review
(1) Points

- ◉ True
- ○ False (*)

  ✖ Incorrect. Refer to Section 3 Lesson 5.

15. The Files class performs which of the following?

☐ Mark for Review
(1) Points

- ○ navigate the file system
- ◉ create files (*)
- ○ works with relative paths
- ○ works with absolute paths
- ○ works across disk volumes

  ✔ Correct

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

16. Which of the following correctly initializes an object named cell of the class Telephones whose generic type is Cellular?

    ○ Telephones cell = new Telephones(Cellular c);
    ◉ Telephones(Cellular) cell = new Telephones(Cellular);
    ○ Telephones<> cell = new Telephones<>(Cellular c);
    ○ Telephones cell = new Telephones(); (*)
    ○ None of the above.

    ❌ Incorrect. Refer to Section 3 Lesson 2.

Mark for Review
(1) Points

17. The local petting zoo is writing a program to be able to collect be able to group animals according to species to better keep track of what animals they have. Which of the following correctly defines a collection that may create these types of groupings for each species at the zoo?

    ○ public class
    animalCollection {...} (*)
    ◉ public class
    animalCollection(AnimalType T) {...}
    ○ public class
    animalCollection {...}
    ○ public class
    animalCollection(animalType) {...}
    ○ None of the above.

    ❌ Incorrect. Refer to Section 3 Lesson 2.

Mark for Review
(1) Points

18. What is a set?

    ◉ something that enables you to create a generic class without specifying a type between angle brackets <>.
    ○ a collection of elements that does not contain duplicates. (*)
    ○ a keyword in Java that initializes an ArrayList.
    ○ a collection of elements that contains duplicates.

    ❌ Incorrect. Refer to Section 3 Lesson 2.

Mark for Review
(1) Points

19. These are a list of elements that have a first in last out ordering.

    ○ Arrays
    ◉ Stacks (*)
    ○ HashMaps
    ○ Enums

    ✅ Correct

Mark for Review
(1) Points

20. Which of the following correctly defines a queue?

    ○ a list of elements with a first in last out order.
    ○ a list of elements with a first in first out order. (*)
    ◉ something that enables you to create a generic class without specifying a type between angle brackets <>.
    ○ it is a keyword in Java that restrict the use of the code to local users only.

    ❌ Incorrect. Refer to Section 3 Lesson 2.

Mark for Review
(1) Points

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

21. When would an enum (or enumeration) be used?

    Mark for Review
    (1) Points

    ○ When you want to be able to create any number of objects of that class.
    ○ When you wish to initialize a HashSet.
    ◉ When you wish to remove data from memory.
    ○ When you already know all the possibilities for objects of that class. (*)

    ✖ Incorrect. Refer to Section 3 Lesson 2.

22. A LinkedList is a list of elements that is dynamically stored.
    True or false?

    Mark for Review
    (1) Points

    ◉ True (*)
    ○ False

    ✔ Correct

23. Which scenario best describes a stack?

    Mark for Review
    (1) Points

    ○ A pile of pancakes with which you add some to the top and remove them one by one from the top to the bottom. (*)
    ◉ A row of books that you can take out of only the middle of the books first and work your way outward toward either edge.
    ○ A line at the grocery store where the first person in the line is the first person to leave.
    ○ All of the above describe a stack.

    ✖ Incorrect. Refer to Section 3 Lesson 2.

24. Why can a LinkList be considered a stack and a queue?

    Mark for Review
    (1) Points

    (Choose all correct answers)

    ☐ Because you can add elements to the end of it. (*)
    ☑ Because you can add element to the beginning of it. (*)
    ☐ Because you can remove elements from the end of it. (*)
    ☑ Because you can remove elements from the beginning of it. (*)

    ✖ Incorrect. Refer to Section 3 Lesson 2.

25. Which scenario best describes a queue?

    Mark for Review
    (1) Points

    ○ A pile of pancakes with which you add some to the top and remove them one by one from the top to the bottom.
    ◉ A row of books that you can take out of only the middle of the books first and work your way outward toward either edge.
    ○ A line at the grocery store where the first person in the line is the first person to leave. (*)
    ○ All of the above describe a queue.

    ✖ Incorrect. Refer to Section 3 Lesson 2.

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

26. A HashSet is a set that is similar to an ArrayList. A HashSet does not have any specific ordering. True or false?

☐ Mark for Review
(1) Points

◉ True (*)
◯ False

✔ Correct

27. What is the correct way to initialize a HashSet?

☐ Mark for Review
(1) Points

◯ ClassMates = public class HashSet();
◉ String classMates = new String();
◯ HashSet classMates = new HashSet(); (*)
◯ classMates = new HashSet[String]();

✖ Incorrect. Refer to Section 3 Lesson 2.

28. Which of the following correctly initializes a generic class Telephones with one generic type Type1?

☐ Mark for Review
(1) Points

◯ public class Telephones(Type1 T){//code here}
◯ public class Telephones {//code here}
◉ public class Telephones {//code here}
◯ public class Telephones(Type1) {//code here}
◯ None of the above. (*)

✖ Incorrect. Refer to Section 3 Lesson 2.

29. The finally clause only executes when an exception is not caught and thrown. True or false?

☐ Mark for Review
(1) Points

◉ True
◯ False (*)

✖ Incorrect. Refer to Section 3 Lesson 4.

30. Methods can not throw exceptions. True or false?

☐ Mark for Review
(1) Points

◉ True
◯ False (*)

✖ Incorrect. Refer to Section 3 Lesson 4.

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

31. When should you not use assertions?

☐ Mark for Review
(1) Points

(Choose all correct answers)

☑ When you want your program to execute efficiently
☐ When you want to check the values of parameters. (*)
☑ When you call methods that may cause side effects in your assertion check. (*)
☐ When you believe you have no bugs in your code.

❌ Incorrect. Refer to Section 3 Lesson 4.

32. Why should you not use assertions to check parameters?

☐ Mark for Review
(1) Points

○ Assertions can be disabled at run time which may cause unexpected results in your assertions (*)
◉ Assertions do not work on parameters
○ Not all methods have parameters, therefore assertions should never be used on parameters
○ It is hard to assume expected values for parameters

❌ Incorrect. Refer to Section 3 Lesson 4.

33. When do you use try-catch statements?

☐ Mark for Review
(1) Points

○ When you want to exit your code before an exception is caught.
○ If you want to switch different values for a certain variable.
◉ When you want to handle an exception. (*)
○ Every time you would like to assign a new value to a variable that is being asserted.

✔ Correct

34. When is the proper time to use exceptions?

☐ Mark for Review
(1) Points

○ When you want to print statements to the screen.
◉ When you want to efficiently and reliably debug your program. (*)
○ If you purposefully put errors in your code you wish to handle.
○ Every time a new method is called.

✔ Correct

35. Multiple exceptions can be caught in one catch statement.
True or false?

☐ Mark for Review
(1) Points

◉ True (*)
○ False

✔ Correct

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

36. In what order do multiple catch statements execute?

    Mark for Review
    (1) Points

    ○ The order they are declared in (most specific first) (*)
    ○ They all execute at the same time
    ◉ They order they are declared in (most general first)
    ○ None of them execute since you can't have multiple catch statements.

    ❌ Incorrect. Refer to Section 3 Lesson 4.

37. What symbol is used to separate multiple exceptions in one catch statement?

    Mark for Review
    (1) Points

    ○ &&
    ◉ (==) (equals equals)
    ○ None, multiple exceptions can't be handled in one catch statement.
    ○ A single bar: | (*)

    ❌ Incorrect. Refer to Section 3 Lesson 4.

38. Virtual method invocation requires that the superclass method is defined as which of the following.

    Mark for Review
    (1) Points

    ○ A public static method.
    ○ A private final method.
    ◉ A public method. (*)
    ○ A public final method.
    ○ A default final method.

    ✔ Correct

39. Modeling business problems requires understanding the interaction between interfaces, abstract and concrete classes, subclasses, and enum classes.
    True or false?

    Mark for Review
    (1) Points

    ◉ True (*)
    ○ False

    ✔ Correct

40. A method with default access can be subclassed.
    True or false?

    Mark for Review
    (1) Points

    ◉ True
    ○ False (*)

    ❌ Incorrect. Refer to Section 3 Lesson 1.

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

41. Calling a subclass method by referring to a superclass works because you have access to all specialized methods through virtual method invocation.
   True or false?

   ◉ True
   ○ False (*)

   ❌ Incorrect. Refer to Section 3 Lesson 1.

   Mark for Review
   (1) Points

42. The instanceof operator works inside an if statement.
   True or false?

   ◉ True (*)
   ○ False

   ✔️ Correct

   Mark for Review
   (1) Points

43. Virtual method invocation occurs when you call a method from a superclass.
   True or false?

   ◉ True
   ○ False (*)

   ❌ Incorrect. Refer to Section 3 Lesson 1.

   Mark for Review
   (1) Points

44. A upward cast means all instance variables of the subclass are permanently lost to the instance.
   True or false?

   ◉ True
   ○ False (*)

   ❌ Incorrect. Refer to Section 3 Lesson 1.

   Mark for Review
   (1) Points

45. Classes define and implement what?

   ○ some methods with implementations
   ○ all methods with implementations
   ◉ all method definitions without any implementations
   ○ variables and methods (*)
   ○ constants and all methods with implementations

   ❌ Incorrect. Refer to Section 3 Lesson 1.

   Mark for Review
   (1) Points

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

46. A method with public access level can be subclassed by?

    ☐ Mark for Review
    (1) Points

- ○ Only a subclass in the same package
- ◉ A subclass in any package
- ○ A static nested class
- ○ An instance nested class
- ○ None of the above. We cannot subclass a method in Java. (*)

    ❌ Incorrect. Refer to Section 3 Lesson 1.

47. The instanceof operator works with class instances and primitive data types. True or false?

    ☐ Mark for Review
    (1) Points

- ◉ True
- ○ False (*)

    ❌ Incorrect. Refer to Section 3 Lesson 1.

48. A downward cast of a subclass lets you access a subclass specialized method call. True or false?

    ☐ Mark for Review
    (1) Points

- ◉ True (*)
- ○ False

    ✔ Correct

49. Immutable classes can be subclassed. True or false?

    ☐ Mark for Review
    (1) Points

- ◉ True
- ○ False (*)

    ❌ Incorrect. Refer to Section 3 Lesson 1.

50. Abstract classes define what?

    ☐ Mark for Review
    (1) Points

- ○ some methods with implementations (*)
- ○ all methods with implementations
- ◉ all method definitions without any implementations
- ○ variables and methods
- ○ constants and all methods with implementations

    ❌ Incorrect. Refer to Section 3 Lesson 1.

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

1. Assertions are boolean statements to test and debug your programs.
True or false?

   ⦿ True (*)
   ○ False

   ✔ Correct

Mark for Review
(1) Points

2. Methods can not throw exceptions.
True or false?

   ⦿ True
   ○ False (*)

   ✖ Incorrect. Refer to Section 3 Lesson 4.

Mark for Review
(1) Points

3. When is the proper time to use exceptions?

   ○ When you want to print statements to the screen.
   ⦿ When you want to efficiently and reliably debug your program. (*)
   ○ If you purposefully put errors in your code you wish to handle.
   ○ Every time a new method is called.

   ✔ Correct

Mark for Review
(1) Points

4. When do errors occur in code?

   (Choose all correct answers)

   ☐ When there is an error in your logic. (*)
   ☑ When and exception is thrown (*)
   ☐ When hardware issues occur (e.g., not enough memory). (*)
   ☑ When files are not found or are unreadable. (*)

   ✖ Incorrect. Refer to Section 3 Lesson 4.

Mark for Review
(1) Points

5. In what order do multiple catch statements execute?

   ○ The order they are declared in (most specific first) (*)
   ○ They all execute at the same time
   ⦿ They order they are declared in (most general first)
   ○ None of them execute since you can't have multiple catch statements.

   ✖ Incorrect. Refer to Section 3 Lesson 4.

Mark for Review
(1) Points

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

6. What is an exception?

    Mark for Review
    (1) Points

    ○ A consistent way of handling various errors. (*)
    ◉ An error that occurs against the flow of your program.
    ○ When a file fails to open.
    ○ If your program exits before you expect it to.

    ❌ Incorrect. Refer to Section 3 Lesson 4.

7. The finally clause only executes when an exception is not caught and thrown. True or false?

    Mark for Review
    (1) Points

    ◉ True
    ○ False (*)

    ❌ Incorrect. Refer to Section 3 Lesson 4.

8. When do you use try-catch statements?

    Mark for Review
    (1) Points

    ○ When you want to exit your code before an exception is caught.
    ◉ If you want to switch different values for a certain variable.
    ○ When you want to handle an exception. (*)
    ○ Every time you would like to assign a new value to a variable that is being asserted.

    ❌ Incorrect. Refer to Section 3 Lesson 4.

9. What symbol is used to separate multiple exceptions in one catch statement?

    Mark for Review
    (1) Points

    ○ &&
    ○ (==) (equals equals)
    ◉ None, multiple exceptions can't be handled in one catch statement.
    ○ A single bar: | (*)

    ❌ Incorrect. Refer to Section 3 Lesson 4.

10. The local petting zoo is writing a program to be able to collect be able to group animals according to species to better keep track of what animals they have. Which of the following correctly defines a collection that may create these types of groupings for each species at the zoo?

    Mark for Review
    (1) Points

    ◉ public class
    animalCollection {...} (*)
    ○ public class
    animalCollection(AnimalType T) {...}
    ○ public class
    animalCollection {...}
    ○ public class
    animalCollection(animalType) {...}
    ○ None of the above.

    ✔️ Correct

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

11. When would an enum (or enumeration) be used?

    ⊘ When you want to be able to create any number of objects of that class.
    ⦿ When you wish to initialize a HashSet.
    ⊘ When you wish to remove data from memory.
    ⊘ When you already know all the possibilities for objects of that class. (*)

    ❌ Incorrect. Refer to Section 3 Lesson 2.

Mark for Review
(1) Points

12. What is a set?

    ⊘ something that enables you to create a generic class without specifying a type between angle brackets <>.
    ⦿ a collection of elements that does not contain duplicates. (*)
    ⊘ a keyword in Java that initializes an ArrayList.
    ⊘ a collection of elements that contains duplicates.

    ✔️ Correct

Mark for Review
(1) Points

13. A List is an ordered Collection that may contain duplicate elements. True or false?

    ⦿ True (*)
    ⊘ False

    ✔️ Correct

Mark for Review
(1) Points

14. Which scenario best describes a queue?

    ⊘ A pile of pancakes with which you add some to the top and remove them one by one from the top to the bottom.
    ⦿ A row of books that you can take out of only the middle of the books first and work your way outward toward either edge.
    ⊘ A line at the grocery store where the first person in the line is the first person to leave. (*)
    ⊘ All of the above describe a queue.

    ❌ Incorrect. Refer to Section 3 Lesson 2.

Mark for Review
(1) Points

15. Which of the following correctly adds "Cabbage" to the ArrayList vegetables?

    ⊘ vegetables += "Cabbage";
    ⦿ vegetables.get("Cabbage");
    ⊘ vegetables[0] = "Cabbage";
    ⊘ vegetables.add("Cabbage"); (*)

    ❌ Incorrect. Refer to Section 3 Lesson 2.

Mark for Review
(1) Points

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

16. Which of the following correctly defines a queue?

☐ Mark for Review
(1) Points

○ a list of elements with a first in last out order.
◉ a list of elements with a first in first out order. (*)
○ something that enables you to create a generic class without specifying a type between angle brackets < >.
○ it is a keyword in Java that restrict the use of the code to local users only.

✔ Correct

17. Which of the following correctly initializes a generic class Telephones with one generic type Type1?

☐ Mark for Review
(1) Points

◉ public class Telephones(Type1 T){//code here}
○ public class Telephones {//code here}
○ public class Telephones {//code here}
○ public class Telephones(Type1) {//code here}
○ None of the above. (*)

✘ Incorrect. Refer to Section 3 Lesson 2.

18. A HashSet is a set that is similar to an ArrayList. A HashSet does not have any specific ordering. True or false?

☐ Mark for Review
(1) Points

◉ True (*)
○ False

✔ Correct

19. What is the correct way to initialize a HashSet?

☐ Mark for Review
(1) Points

◉ ClassMates = public class HashSet();
○ String classMates = new String();
○ HashSet classMates = new HashSet(); (*)
○ classMates = new HashSet[String]();

✘ Incorrect. Refer to Section 3 Lesson 2.

20. These are a list of elements that have a first in last out ordering.

☐ Mark for Review
(1) Points

○ Arrays
◉ Stacks (*)
○ HashMaps
○ Enums

✔ Correct

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Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

21. What is wrong with the following declaration of the ArrayList of strings arr?
ArrayList(String) arr = new ArrayList(String)<>;

☐ Mark for Review
(1) Points

(Choose all correct answers)

☐ Only the 1st occurrence of "(String)" should be replaced with ""
☑ The angled brackets "<>" need to be replaced with parenthesis "()" and parenthesis "()"need to be replaced by "<>" (*)
☑ Both occurences of "(String)" should be replaced with "" (*)
☐ Nothing, this declaration is correct.

✔ Correct

22. A LinkedList is a list of elements that is dynamically stored.
True or false?

☐ Mark for Review
(1) Points

◉ True (*)
◯ False

✔ Correct

23. Which of the following methods for the String class take a regular expression as a parameter and returns true if the string matches the expression?

☐ Mark for Review
(1) Points

◯ equals(String regex)
◉ equalsIgnoreCase(String regex)
◯ compareTo(String regex)
◯ matches(String regex) (*)

✖ Incorrect. Refer to Section 3 Lesson 3.

24. Which of the following are true about the method split?

☐ Mark for Review
(1) Points

(Choose all correct answers)

☑ It can be used with a string as a parameter. (*)
☑ It's default, with no specified parameter, is parsing by spaces.
☐ It returns an array of strings. (*)
☐ It can be used with a regular expression as a prameter. (*)

✖ Incorrect. Refer to Section 3 Lesson 3.

25. Which of the following correctly defines Matcher?

☐ Mark for Review
(1) Points

◯ a regular expression symbol that represents any character.
◉ a method of dividing a string into a set of sub-strings.
◯ a class in the java.util.regex package that stores the matches between a pattern and a string. (*)
◯ a class in the java.util.regex package that stores the format of a regular expression.

✖ Incorrect. Refer to Section 3 Lesson 3.

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Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

26. Square brackets are a representation for any character in regular expressions "[ ]". True or false?

☐ Mark for Review
(1) Points

    ◉ True
    ○ False (*)

    ❌ Incorrect. Refer to Section 3 Lesson 3.

27. Consider that you are writing a program for analyzing feedback on the video game you have developed. You have completed everything except the segment of code that checks that the user's input, String userI, is a valid rating. Note that a valid rating is a single digit between 1 and 5 inclusive. Which of the following segments of code returns true if the user's input is a valid rating?

☐ Mark for Review
(1) Points

(Choose all correct answers)

    ☐ return userI.matches("[1-5]"); (*)
    ☑ return userI.matches("{1-5}");
    ☑ return userI.matches("[1-5].*");
    ☐ return userI.matches("[1-5]{1}"); (*)

    ❌ Incorrect. Refer to Section 3 Lesson 3.

28. What is the correct explanation of when this code will return true? return str.matches(".*[0-9]{6}.*");

☐ Mark for Review
(1) Points

    ○ Any time that str contains two dots.
    ◉ Any time that str contains a sequence of 6 digits. (*)
    ○ Any time that str has between zero and nine characters followed by a 6.
    ○ Any time str contains a 6.
    ○ Always.

    ✅ Correct

29. Which of the following does not correctly match the regular expression symbol to its proper function?

☐ Mark for Review
(1) Points

    ○ "{x}" means there must be x occurrences of the preceding character in the string to be a match.
    ○ "?" means there may be zero or one occurrences of the preceding character in the string to be a match.
    ◉ "+" means there may be zero or more occurrences of the preceding character in the string to be a match. (*)
    ○ "{x,}" means there may be x or more occurrences of the preceeding character in the string to be a match.
    ○ "{x,y}" means there may be between x and y occurrences of the preceding character in the string to be a match.

    ✅ Correct

30. Which of the following is an absolute Windows path?

☐ Mark for Review
(1) Points

    ○ /home/user/username
    ○ /
    ◉ \Users\UserName\data
    ○ C:\Users\UserName\data (*)
    ○ data

    ❌ Incorrect. Refer to Section 3 Lesson 5.

Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

31. The java.io package has problems with missing operations, like copy, move, and such.
True or false?

☐ Mark for Review
(1) Points

◉ True (*)
○ False

✔️ Correct

32. The deSerialize() method writes a serialized object.
True or false?

☐ Mark for Review
(1) Points

◉ True
○ False (*)

❌ Incorrect. Refer to Section 3 Lesson 5.

33. Encoding an object into a stream is serialization.
True or false?

☐ Mark for Review
(1) Points

◉ True (*)
○ False

✔️ Correct

34. The java.nio.file package has improved exception handling.
True or false?

☐ Mark for Review
(1) Points

◉ True (*)
○ False

✔️ Correct

35. The System.out is what type of stream?

☐ Mark for Review
(1) Points

○ A BufferedWriter stream
◉ A PrintStream (*)
○ A BufferedReader stream
○ An OutputStream
○ A Reader stream

✔️ Correct

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

36. The serialize() method writes a serialized object.
True or false?

☐ Mark for Review
(1) Points

◉ True
○ False (*)

❌ Incorrect. Refer to Section 3 Lesson 5.

37. The BufferedInputStream is a direct subclass of what other class?

☐ Mark for Review
(1) Points

○ InputStream
◉ FilterInputStream (*)
○ InputStream
○ FileInputStream
○ PipedInputStream

✔️ Correct

38. Modeling business problems requires understanding the interaction between interfaces, abstract and concrete classes, subclasses, and enum classes.
True or false?

☐ Mark for Review
(1) Points

◉ True (*)
○ False

✔️ Correct

39. Immutable classes do allow instance variables to be changed by overriding methods.
True or false?

☐ Mark for Review
(1) Points

◉ True
○ False (*)

❌ Incorrect. Refer to Section 3 Lesson 1.

40. The instanceof operator works with class instances and primitive data types.
True or false?

☐ Mark for Review
(1) Points

◉ True
○ False (*)

❌ Incorrect. Refer to Section 3 Lesson 1.

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

41. A method with public access can be subclassed.
    True or false?

    ☐ Mark for Review
    (1) Points

    ◉ True
    ○ False (*)

    ❌ Incorrect. Refer to Section 3 Lesson 1.

42. Classes define and implement what?

    ☐ Mark for Review
    (1) Points

    ○ some methods with implementations
    ○ all methods with implementations
    ◉ all method definitions without any implementations
    ○ variables and methods (*)
    ○ constants and all methods with implementations

    ❌ Incorrect. Refer to Section 3 Lesson 1.

43. Classes can be made immutable by placing a final key word before all method implementations.
    True or false?

    ☐ Mark for Review
    (1) Points

    ◉ True (*)
    ○ False

    ✔ Correct

44. Abstract classes define what?

    ☐ Mark for Review
    (1) Points

    ○ some methods with implementations (*)
    ◉ all methods with implementations
    ○ all method definitions without any implementations
    ○ variables and methods
    ○ constants and all methods with implementations

    ❌ Incorrect. Refer to Section 3 Lesson 1.

45. Interfaces define what?

    ☐ Mark for Review
    (1) Points

    ○ some methods with implementations
    ○ all methods with implementations
    ◉ all method definitions without any implementations (*)
    ○ variables and methods
    ○ constants and all methods with implementations

    ✔ Correct

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

46. Virtual method invocation requires that the superclass method is defined as which of the following. ☐ Mark for Review
(1) Points

- ○ A public static method.
- ○ A private final method.
- ◉ A public method. (*)
- ○ A public final method.
- ○ A default final method.

✔ Correct

47. Virtual method invocation occurs when you call a superclass method for a subclass with an overriding method of the same name.
True or false? ☐ Mark for Review
(1) Points

- ◉ True (*)
- ○ False

✔ Correct

48. Immutable classes can be subclassed.
True or false? ☐ Mark for Review
(1) Points

- ◉ True
- ○ False (*)

✖ Incorrect. Refer to Section 3 Lesson 1.

49. A method with public access level can be subclassed by? ☐ Mark for Review
(1) Points

- ○ Only a subclass in the same package
- ◉ A subclass in any package
- ○ A static nested class
- ○ An instance nested class
- ○ None of the above. We cannot subclass a method in Java. (*)

✖ Incorrect. Refer to Section 3 Lesson 1.

50. Virtual method invocation is: ☐ Mark for Review
(1) Points

- ○ Not part of polymorphism.
- ◉ When the method of a superclass is used on a superclass reference.
- ○ When the method of a subclass is used on a superclass reference. (*)
- ○ When the method of a subclass is used on a subclass reference.

✖ Incorrect. Refer to Section 3 Lesson 1.

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Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

1. The BufferedOutputStream is a direct subclass of what other class?

      ◉ FilterOutputStream (*)
      ○ OutputStream
      ○ PrintStream
      ○ DigestOutputStream
      ○ ObjectOutputStream

      ✔ Correct

☐ Mark for Review
(1) Points

2. The Files class performs which of the following?

      ○ navigate the file system
      ◉ create files (*)
      ○ works with relative paths
      ○ works with absolute paths
      ○ works across disk volumes

      ✔ Correct

☐ Mark for Review
(1) Points

3. Serialized classes are less flexible to change than non-serialized classes. True or false?

      ◉ True
      ○ False (*)

      ✖ Incorrect. Refer to Section 3 Lesson 5.

☐ Mark for Review
(1) Points

4. Encoding an object into a stream is serialization. True or false?

      ◉ True (*)
      ○ False

      ✔ Correct

☐ Mark for Review
(1) Points

5. The System.in is what type of stream?

      ○ A BufferedWriter stream
      ○ A PrintStream
      ◉ An InputStream (*)
      ○ A BufferedReader stream
      ○ A Reader stream

      ✔ Correct

☐ Mark for Review
(1) Points

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

6. The Files class provides a instance method that creates a new BufferedReader.
   True or false?

   ◉ True (*)
   ◯ False

   ✅ Correct

☐ Mark for Review
(1) Points

7. The System.err writes standard output to the console.
   True or false?

   ◉ True (*)
   ◯ False

   ✅ Correct

☐ Mark for Review
(1) Points

8. The Paths class provides a static get() method to find a valid Path.
   True or false?

   ◉ True (*)
   ◯ False

   ✅ Correct

☐ Mark for Review
(1) Points

9. Which of the following correctly defines a repetition operator?

   ◯ a symbol that represents any character in regular expressions.
   ◉ a method that returns the number of occurrences of the specified character.
   ◯ any symbol in regular expressions that indicates the number of occurrences a specified
     character appears in a matching string. (*)
   ◯ None of the above.

   ❌ Incorrect. Refer to Section 3 Lesson 3.

☐ Mark for Review
(1) Points

10. Which of the following methods can be used to replace a segment in a string with a new string?

   ◯ remove(String oldString, String newString)
   ◉ replaceAll(String oldString, String newString) (*)
   ◯ replaceAll(String newString)
   ◯ substring(int start, int end, String newString)
   ◯ None of the above. There is no replaceAll(String newString) method with one argument.

   ✅ Correct

☐ Mark for Review
(1) Points

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

11. Split is a method for Strings that parses a string by a specified character, or, if unspecified, by spaces, and returns the parsed elements in an array of Strings.
True or false?

☐ Mark for Review
(1) Points

⦿ True
○ False (*)

❌ Incorrect. Refer to Section 3 Lesson 3.

12. Which of the following are true about the method split?

☐ Mark for Review
(1) Points

(Choose all correct answers)

☐ It can be used with a string as a parameter. (*)
☑ It's default, with no specified parameter, is parsing by spaces.
☐ It returns an array of strings. (*)
☑ It can be used with a regular expression as a prameter. (*)

❌ Incorrect. Refer to Section 3 Lesson 3.

13. Consider that you are making a calendar and decide to write a segment of code that returns true if the string month is April, May, June, or July. Which code segment correctly implements use of regular expressions to complete this task?

☐ Mark for Review
(1) Points

○ return month.matches("April|May|June|July"); (*)
○ return month.substring(0,3);
⦿ return month.compareTo("April, May, June, July");
○ return month.equals("April, May, June, July");
○ return month.matches("April"|"May"|"June"|"July");

❌ Incorrect. Refer to Section 3 Lesson 3.

14. What is the function of the asterisk (*) in regular expressions?

☐ Mark for Review
(1) Points

○ The asterisk has no function in regular expressions.
⦿ Indicates that the preceding character may occur 1 or more times in a proper match.
○ Indicates that the preceding character may occur 0 or 1 times in a proper match.
○ Indicates that the preceding character may occur 0 or more times in a proper match. (*)

❌ Incorrect. Refer to Section 3 Lesson 3.

15. Which of the following methods for the String class take a regular expression as a parameter and returns true if the string matches the expression?

☐ Mark for Review
(1) Points

○ equals(String regex)
⦿ equalsIgnoreCase(String regex)
○ compareTo(String regex)
○ matches(String regex) (*)

❌ Incorrect. Refer to Section 3 Lesson 3.

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

16. Which scenario best describes a queue?

    ☐ Mark for Review
    (1) Points

    ○ A pile of pancakes with which you add some to the top and remove them one by one from the top to the bottom.
    ○ A row of books that you can take out of only the middle of the books first and work your way outward toward either edge.
    ◉ A line at the grocery store where the first person in the line is the first person to leave. (*)
    ○ All of the above describe a queue.

    ✔ Correct

17. Which of the following correctly adds "Cabbage" to the ArrayList vegetables?

    ☐ Mark for Review
    (1) Points

    ○ vegetables += "Cabbage";
    ○ vegetables.get("Cabbage");
    ◉ vegetables[0] = "Cabbage";
    ○ vegetables.add("Cabbage"); (*)

    ✘ Incorrect. Refer to Section 3 Lesson 2.

18. What are maps that link a Key to a Value?

    ☐ Mark for Review
    (1) Points

    ○ Arrays
    ○ ArrayLists
    ◉ HashSets
    ○ HashMaps (*)

    ✘ Incorrect. Refer to Section 3 Lesson 2.

19. Why can a LinkList be considered a stack and a queue?

    ☐ Mark for Review
    (1) Points

    (Choose all correct answers)

    ☐ Because you can add elements to the end of it. (*)
    ☑ Because you can add element to the beginning of it. (*)
    ☐ Because you can remove elements from the end of it. (*)
    ☑ Because you can remove elements from the beginning of it. (*)

    ✘ Incorrect. Refer to Section 3 Lesson 2.

20. Which of the following correctly initializes an object named cell of the class Telephones whose generic type is Cellular?

    ☐ Mark for Review
    (1) Points

    ○ Telephones cell = new Telephones(Cellular c);
    ◉ Telephones(Cellular) cell = new Telephones(Cellular);
    ○ Telephones<> cell = new Telephones<>(Cellular c);
    ○ Telephones cell = new Telephones(); (*)
    ○ None of the above.

    ✘ Incorrect. Refer to Section 3 Lesson 2.

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

21. Which scenario best describes a stack?

☐ Mark for Review
(1) Points

- ○ A pile of pancakes with which you add some to the top and remove them one by one from the top to the bottom. (*)
- ◉ A row of books that you can take out of only the middle of the books first and work your way outward toward either edge.
- ○ A line at the grocery store where the first person in the line is the first person to leave.
- ○ All of the above describe a stack.

❌ Incorrect. Refer to Section 3 Lesson 2.

22. Which of the following methods adds a Key-Value map to a HashMap?

☐ Mark for Review
(1) Points

- ○ put(Key, Value) (*)
- ○ add(Key, Value)
- ◉ get(Key, Value)
- ○ remove(Key, Value)

❌ Incorrect. Refer to Section 3 Lesson 2.

23. Which of the following correctly defines a queue?

☐ Mark for Review
(1) Points

- ○ a list of elements with a first in last out order.
- ◉ a list of elements with a first in first out order. (*)
- ○ something that enables you to create a generic class without specifying a type between angle brackets <>.
- ○ it is a keyword in Java that restrict the use of the code to local users only.

✔️ Correct

24. Define a Collection

☐ Mark for Review
(1) Points

- ○ It enables you to create a generic class without specifying a type between angle brackets <>
- ○ It is a special type of class that is associated with one or more non-specified Java type.
- ◉ It is an interface in the java.util package that is used to define a group of objects (*)
- ○ It is a subclass of List

✔️ Correct

25. What is wrong with the following declaration of the ArrayList of strings arr?
ArrayList(String) arr = new ArrayList(String)<>;

☐ Mark for Review
(1) Points

(Choose all correct answers)

- ☐ Only the 1st occurrence of "(String)" should be replaced with ""
- ☑ The angled brackets "<>" need to be replaced with parenthesis "()" and parenthesis "()"need to be replaced by "<>" (*)
- ☑ Both occurences of "(String)" should be replaced with "" (*)
- ☐ Nothing, this declaration is correct.

✔️ Correct

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

26. A List is an ordered Collection that may contain duplicate elements.
True or false?

☐ Mark for Review
(1) Points

- ◉ True (*)
- ○ False

✔ Correct

27. Which of the following correctly initializes a generic class Telephones with one generic type Type1?

☐ Mark for Review
(1) Points

- ○ public class Telephones(Type1 T){//code here}
- ○ public class Telephones {//code here}
- ◉ public class Telephones {//code here}
- ○ public class Telephones(Type1) {//code here}
- ○ None of the above. (*)

❌ Incorrect. Refer to Section 3 Lesson 2.

28. Nodes are components of LinkedLists that are like maps because they identify where the next and previous nodes are.
True or false?

☐ Mark for Review
(1) Points

- ◉ True (*)
- ○ False

✔ Correct

29. A method with public access level can be subclassed by?

☐ Mark for Review
(1) Points

- ○ Only a subclass in the same package
- ◉ A subclass in any package
- ○ A static nested class
- ○ An instance nested class
- ○ None of the above. We cannot subclass a method in Java. (*)

❌ Incorrect. Refer to Section 3 Lesson 1.

30. The instanceof operator only works with class instances.
True or false?

☐ Mark for Review
(1) Points

- ◉ True (*)
- ○ False

✔ Correct

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

31. The instanceof operator finds subclasses when they are passed as a superclass.
True or false?

- ◉ True (*)
- ○ False

✔ Correct

☐ Mark for Review
(1) Points

32. Upward casting an object instance means you can't access subclass specific methods.
True or false?

- ◉ True (*)
- ○ False

✔ Correct

☐ Mark for Review
(1) Points

33. Abstract classes define what?

- ○ some methods with implementations (*)
- ◉ all methods with implementations
- ○ all method definitions without any implementations
- ○ variables and methods
- ○ constants and all methods with implementations

✘ Incorrect. Refer to Section 3 Lesson 1.

☐ Mark for Review
(1) Points

34. Classes define and implement what?

- ○ some methods with implementations
- ◉ all methods with implementations
- ○ all method definitions without any implementations
- ○ variables and methods (*)
- ○ constants and all methods with implementations

✘ Incorrect. Refer to Section 3 Lesson 1.

☐ Mark for Review
(1) Points

35. A downward cast of a subclass lets you access a subclass specialized method call.
True or false?

- ◉ True (*)
- ○ False

✔ Correct

☐ Mark for Review
(1) Points

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

36. The instanceof operator works with class instances and primitive data types.
True or false?

<input disabled checked> True
<input disabled> False (*)

❌ Incorrect. Refer to Section 3 Lesson 1.

☐ Mark for Review
(1) Points

37. Interfaces define what?

<input disabled> some methods with implementations
<input disabled> all methods with implementations
<input disabled checked> all method definitions without any implementations (*)
<input disabled> variables and methods
<input disabled> constants and all methods with implementations

✅ Correct

☐ Mark for Review
(1) Points

38. Immutable classes do allow instance variables to be changed by overriding methods.
True or false?

<input disabled checked> True
<input disabled> False (*)

❌ Incorrect. Refer to Section 3 Lesson 1.

☐ Mark for Review
(1) Points

39. Modeling business problems requires understanding the interaction between interfaces, abstract and concrete classes, subclasses, and enum classes.
True or false?

<input disabled checked> True (*)
<input disabled> False

✅ Correct

☐ Mark for Review
(1) Points

40. Classes can be made immutable by placing a final key word before all method implementations.
True or false?

<input disabled checked> True (*)
<input disabled> False

✅ Correct

☐ Mark for Review
(1) Points

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

41. A method with default access level can be subclassed by?

☐ Mark for Review
(1) Points

      ○ Only a subclass in the same package
      ○ A subclass in any package
      ◉ A static nested class
      ○ An instance nested class
      ○ None of the above. We cannot subclass a method in Java. (*)

      ❌ Incorrect. Refer to Section 3 Lesson 1.

42. When should you not use assertions?

☐ Mark for Review
(1) Points

    (Choose all correct answers)

      ☐ When you want your program to execute efficiently
      ☑ When you want to check the values of parameters. (*)
      ☐ When you call methods that may cause side effects in your assertion check. (*)
      ☑ When you believe you have no bugs in your code.

      ❌ Incorrect. Refer to Section 3 Lesson 4.

43. When do errors occur in code?

☐ Mark for Review
(1) Points

    (Choose all correct answers)

      ☐ When there is an error in your logic. (*)
      ☑ When and exception is thrown (*)
      ☐ When hardware issues occur (e.g., not enough memory). (*)
      ☑ When files are not found or are unreadable. (*)

      ❌ Incorrect. Refer to Section 3 Lesson 4.

44. Why should you not use assertions to check parameters?

☐ Mark for Review
(1) Points

      ○ Assertions can be disabled at run time which may cause unexpected results in your assertions (*)
      ◉ Assertions do not work on parameters
      ○ Not all methods have parameters, therefore assertions should never be used on parameters
      ○ It is hard to assume expected values for parameters

      ❌ Incorrect. Refer to Section 3 Lesson 4.

45. What is an exception?

☐ Mark for Review
(1) Points

      ○ A consistent way of handling various errors. (*)
      ◉ An error that occurs against the flow of your program.
      ○ When a file fails to open.
      ○ If your program exits before you expect it to.

      ❌ Incorrect. Refer to Section 3 Lesson 4.

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

46. When do you use try-catch statements?

    ○ When you want to exit your code before an exception is caught.
    ◉ If you want to switch different values for a certain variable.
    ○ When you want to handle an exception. (*)
    ○ Every time you would like to assign a new value to a variable that is being asserted.

    ❌ Incorrect. Refer to Section 3 Lesson 4.

☐ Mark for Review
(1) Points

47. Methods can not throw exceptions.
True or false?

    ◉ True
    ○ False (*)

    ❌ Incorrect. Refer to Section 3 Lesson 4.

☐ Mark for Review
(1) Points

48. In what order do multiple catch statements execute?

    ○ The order they are declared in (most specific first) (*)
    ○ They all execute at the same time
    ◉ They order they are declared in (most general first)
    ○ None of them execute since you can't have multiple catch statements.

    ❌ Incorrect. Refer to Section 3 Lesson 4.

☐ Mark for Review
(1) Points

49. Multiple exceptions can be caught in one catch statement.
True or false?

    ◉ True (*)
    ○ False

    ✔️ Correct

☐ Mark for Review
(1) Points

50. The finally clause only executes when an exception is not caught and thrown.
True or false?

    ◉ True
    ○ False (*)

    ❌ Incorrect. Refer to Section 3 Lesson 4.

☐ Mark for Review
(1) Points

Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

1. Assertions are boolean statements to test and debug your programs.
   True or false?

   ⦿ True (*)
   ○ False

   ✅ Correct

   ☐ Mark for Review
   (1) Points

2. In what order do multiple catch statements execute?

   ○ The order they are declared in (most specific first) (*)
   ⦿ They all execute at the same time
   ○ They order they are declared in (most general first)
   ○ None of them execute since you can't have multiple catch statements.

   ❌ Incorrect. Refer to Section 3 Lesson 4.

   ☐ Mark for Review
   (1) Points

3. When do you use try-catch statements?

   ○ When you want to exit your code before an exception is caught.
   ⦿ If you want to switch different values for a certain variable.
   ○ When you want to handle an exception. (*)
   ○ Every time you would like to assign a new value to a variable that is being asserted.

   ❌ Incorrect. Refer to Section 3 Lesson 4.

   ☐ Mark for Review
   (1) Points

4. The finally clause only executes when an exception is not caught and thrown.
   True or false?

   ⦿ True
   ○ False (*)

   ❌ Incorrect. Refer to Section 3 Lesson 4.

   ☐ Mark for Review
   (1) Points

5. When do errors occur in code?

   (Choose all correct answers)
   ☐ When there is an error in your logic. (*)
   ☑ When and exception is thrown (*)
   ☑ When hardware issues occur (e.g., not enough memory). (*)
   ☐ When files are not found or are unreadable. (*)

   ❌ Incorrect. Refer to Section 3 Lesson 4.

   ☐ Mark for Review
   (1) Points

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

6. What is an exception?

      ☐ Mark for Review
      (1) Points

    ◉ A consistent way of handling various errors. (*)
    ◉ An error that occurs against the flow of your program.
    ◉ When a file fails to open.
    ◉ If your program exits before you expect it to.

    ❌ Incorrect. Refer to Section 3 Lesson 4.

7. Why should you not use assertions to check parameters?

      ☐ Mark for Review
      (1) Points

    ◉ Assertions can be disabled at run time which may cause unexpected results in your assertions (*)
    ◉ Assertions do not work on parameters
    ◉ Not all methods have parameters, therefore assertions should never be used on parameters
    ◉ It is hard to assume expected values for parameters

    ❌ Incorrect. Refer to Section 3 Lesson 4.

8. When is the proper time to use exceptions?

      ☐ Mark for Review
      (1) Points

    ◉ When you want to print statements to the screen.
    ◉ When you want to efficiently and reliably debug your program. (*)
    ◉ If you purposefully put errors in your code you wish to handle.
    ◉ Every time a new method is called.

    ✔️ Correct

9. When should you not use assertions?

      ☐ Mark for Review
      (1) Points

    (Choose all correct answers)

    ☑ When you want your program to execute efficiently
    ☐ When you want to check the values of parameters. (*)
    ☐ When you call methods that may cause side effects in your assertion check. (*)
    ☑ When you believe you have no bugs in your code.

    ❌ Incorrect. Refer to Section 3 Lesson 4.

10. The Files class provides a instance method that creates a new BufferedReader. True or false?

      ☐ Mark for Review
      (1) Points

    ◉ True (*)
    ◉ False

    ✔️ Correct

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

11. The java.io package has problems with missing operations, like copy, move, and such. True or false?

☐ Mark for Review
(1) Points

◉ True (*)
○ False

✔ Correct

12. Serialized classes are less flexible to change than non-serialized classes. True or false?

☐ Mark for Review
(1) Points

◉ True
○ False (*)

✖ Incorrect. Refer to Section 3 Lesson 5.

13. Encoding an object into a stream is serialization. True or false?

☐ Mark for Review
(1) Points

◉ True (*)
○ False

✔ Correct

14. Which of the following is an absolute Windows path?

☐ Mark for Review
(1) Points

○ /home/user/username
○ /
◉ \Users\UserName\data
○ C:\Users\UserName\data (*)
○ data

✖ Incorrect. Refer to Section 3 Lesson 5.

15. The System.in is what type of stream?

☐ Mark for Review
(1) Points

○ A BufferedWriter stream
◉ A PrintStream
○ An InputStream (*)
○ A BufferedReader stream
○ A Reader stream

✖ Incorrect. Refer to Section 3 Lesson 5.

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

16. The System.err writes standard output to the console.
    True or false?

    ☐ Mark for Review
    (1) Points

    ◉ True (*)
    ○ False

    ✔ Correct

17. The Files class performs which of the following?

    ☐ Mark for Review
    (1) Points

    ○ navigate the file system
    ○ create files (*)
    ◉ works with relative paths
    ○ works with absolute paths
    ○ works across disk volumes

    ✘ Incorrect. Refer to Section 3 Lesson 5.

18. Which of the following methods adds a Key-Value map to a HashMap?

    ☐ Mark for Review
    (1) Points

    ◉ put(Key, Value) (*)
    ○ add(Key, Value)
    ○ get(Key, Value)
    ○ remove(Key, Value)

    ✔ Correct

19. Define a Collection

    ☐ Mark for Review
    (1) Points

    ○ It enables you to create a generic class without specifying a type between angle brackets < >
    ◉ It is a special type of class that is associated with one or more non-specified Java type.
    ○ It is an interface in the java.util package that is used to define a group of objects (*)
    ○ It is a subclass of List

    ✘ Incorrect. Refer to Section 3 Lesson 2.

20. Nodes are components of LinkedLists that are like maps because they identify where the next and previous nodes are.
    True or false?

    ☐ Mark for Review
    (1) Points

    ◉ True (*)
    ○ False

    ✔ Correct

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

21. What is the correct way to initialize a HashSet?

☐ Mark for Review
(1) Points

- ○ ClassMates = public class
  HashSet();
- ● String classMates = new
  String();
- ○ HashSet classMates =
  new HashSet(); (*)
- ○ classMates = new HashSet[String]();

❌ Incorrect. Refer to Section 3 Lesson 2.

22. Which of the following correctly defines a queue?

☐ Mark for Review
(1) Points

- ○ a list of elements with a first in last out order.
- ○ a list of elements with a first in first out order. (*)
- ● something that enables you to create a generic class without specifying a type between angle
  brackets <>.
- ○ it is a keyword in Java that restrict the use of the code to local users only.

❌ Incorrect. Refer to Section 3 Lesson 2.

23. Which of the following correctly initializes a generic class Telephones with one generic type Type1?

☐ Mark for Review
(1) Points

- ○ public class Telephones(Type1 T){//code here}
- ● public class Telephones {//code here}
- ○ public class Telephones {//code here}
- ○ public class Telephones(Type1) {//code here}
- ○ None of the above. (*)

❌ Incorrect. Refer to Section 3 Lesson 2.

24. What are maps that link a Key to a Value?

☐ Mark for Review
(1) Points

- ○ Arrays
- ● ArrayLists
- ○ HashSets
- ○ HashMaps (*)

❌ Incorrect. Refer to Section 3 Lesson 2.

25. Which of the following correctly initializes an object named cell of the class Telephones whose
generic type is Cellular?

☐ Mark for Review
(1) Points

- ○ Telephones cell = new Telephones(Cellular c);
- ● Telephones(Cellular) cell = new Telephones(Cellular);
- ○ Telephones<> cell = new Telephones<>(Cellular c);
- ○ Telephones cell = new Telephones(); (*)
- ○ None of the above.

❌ Incorrect. Refer to Section 3 Lesson 2.

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

26. The local petting zoo is writing a program to be able to collect be able to group animals according to species to better keep track of what animals they have. Which of the following correctly defines a collection that may create these types of groupings for each species at the zoo?

◉ public class
    animalCollection {...} (*)
○ public class
    animalCollection(AnimalType T) {...}
○ public class
    animalCollection {...}
○ public class
    animalCollection(animalType) {...}
○ None of the above.

✔ Correct

☐ Mark for Review
(1) Points

27. Which scenario best describes a stack?

○ A pile of pancakes with which you add some to the top and remove them one by one from the top to the bottom. (*)
◉ A row of books that you can take out of only the middle of the books first and work your way outward toward either edge.
○ A line at the grocery store where the first person in the line is the first person to leave.
○ All of the above describe a stack.

✖ Incorrect. Refer to Section 3 Lesson 2.

☐ Mark for Review
(1) Points

28. What is wrong with the following declaration of the ArrayList of strings arr?
    ArrayList(String) arr = new ArrayList(String)<>;

(Choose all correct answers)

☑ Only the 1st occurrence of "(String)" should be replaced with ""
☐ The angled brackets "<>" need to be replaced with parenthesis "()" and parenthesis "()"need to be replaced by "<>" (*)
☑ Both occurences of "(String)" should be replaced with "" (*)
☐ Nothing, this declaration is correct.

✖ Incorrect. Refer to Section 3 Lesson 2.

☐ Mark for Review
(1) Points

29. Why can a LinkList be considered a stack and a queue?

(Choose all correct answers)

☑ Because you can add elements to the end of it. (*)
☐ Because you can add element to the beginning of it. (*)
☑ Because you can remove elements from the end of it. (*)
☐ Because you can remove elements from the beginning of it. (*)

✖ Incorrect. Refer to Section 3 Lesson 2.

☐ Mark for Review
(1) Points

30. Which of the following correctly adds "Cabbage" to the ArrayList vegetables?

○ vegetables += "Cabbage";
◉ vegetables.get("Cabbage");
○ vegetables[0] = "Cabbage";

☐ Mark for Review
(1) Points

○ vegetables.add("Cabbage"); (*)

❌ Incorrect. Refer to Section 3 Lesson 2.

Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

31. What is the function of the asterisk (*) in regular expressions?

    ☐ Mark for Review
    (1) Points

    ○ The asterisk has no function in regular expressions.
    ◉ Indicates that the preceding character may occur 1 or more times in a proper match.
    ○ Indicates that the preceding character may occur 0 or 1 times in a proper match.
    ○ Indicates that the preceding character may occur 0 or more times in a proper match. (*)

    ❌ Incorrect. Refer to Section 3 Lesson 3.

32. What is the correct explanation of when this code will return true? return str.matches(".*[0-9]{6}.*");

    ☐ Mark for Review
    (1) Points

    ○ Any time that str contains two dots.
    ◉ Any time that str contains a sequence of 6 digits. (*)
    ○ Any time that str has between zero and nine characters followed by a 6.
    ○ Any time str contains a 6.
    ○ Always.

    ✅ Correct

33. Which of the following does not correctly match the regular expression symbol to its proper function?

    ☐ Mark for Review
    (1) Points

    ○ "{x}" means there must be x occurrences of the preceding character in the string to be a match.
    ○ "?" means there may be zero or one occurrences of the preceding character in the string to be a match.
    ◉ "+" means there may be zero or more occurrences of the preceding character in the string to be a match. (*)
    ○ "{x,}" means there may be x or more occurrences of the preceeding character in the string to be a match.
    ○ "{x,y}" means there may be between x and y occurrences of the preceding character in the string to be a match.

    ✅ Correct

34. Regular Expressions are a part of the java.util.regex package, thus java.util.regex must be imported for any programs containing regular expressions.
    True or false?

    ☐ Mark for Review
    (1) Points

    ◉ True (*)
    ○ False

    ✅ Correct

35. Which of the following correctly defines a repetition operator?

    ☐ Mark for Review
    (1) Points

    ○ a symbol that represents any character in regular expressions.
    ◉ a method that returns the number of occurrences of the specified character.
    ○ any symbol in regular expressions that indicates the number of occurrences a specified character appears in a matching string. (*)
    ○ None of the above.

    ❌ Incorrect. Refer to Section 3 Lesson 3.

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

36. Consider that you are writing a program for analyzing feedback on the video game you have developed. You have completed everything except the segment of code that checks that the user's input, String userI, is a valid rating. Note that a valid rating is a single digit between 1 and 5 inclusive. Which of the following segments of code returns true if the user's input is a valid rating?

    (Choose all correct answers)

    - ☐ return userI.matches("[1-5]"); (*)
    - ☐ return userI.matches("{1-5}");
    - ☑ return userI.matches("[1-5].*");
    - ☐ return userI.matches("[1-5]{1}"); (*)

    ❌ Incorrect. Refer to Section 3 Lesson 3.

    ☐ Mark for Review
    (1) Points

37. Which of the following methods for the String class take a regular expression as a parameter and returns true if the string matches the expression?

    - ○ equals(String regex)
    - ◉ equalsIgnoreCase(String regex)
    - ○ compareTo(String regex)
    - ○ matches(String regex) (*)

    ❌ Incorrect. Refer to Section 3 Lesson 3.

    ☐ Mark for Review
    (1) Points

38. Classes can be made immutable by placing a final key word before all method implementations. True or false?

    - ◉ True (*)
    - ○ False

    ✔ Correct

    ☐ Mark for Review
    (1) Points

39. A method with default access level can be subclassed by?

    - ○ Only a subclass in the same package
    - ○ A subclass in any package
    - ◉ A static nested class
    - ○ An instance nested class
    - ○ None of the above. We cannot subclass a method in Java. (*)

    ❌ Incorrect. Refer to Section 3 Lesson 1.

    ☐ Mark for Review
    (1) Points

40. The instanceof operator works with class instances and primitive data types. True or false?

    - ◉ True
    - ○ False (*)

    ❌ Incorrect. Refer to Section 3 Lesson 1.

    ☐ Mark for Review
    (1) Points

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

41. Virtual method invocation is:

☐ Mark for Review
(1) Points

- ○ Not part of polymorphism.
- ○ When the method of a superclass is used on a superclass reference.
- ◉ When the method of a subclass is used on a superclass reference. (*)
- ○ When the method of a subclass is used on a subclass reference.

✔ Correct

42. Virtual method invocation occurs when you call a method from a superclass. True or false?

☐ Mark for Review
(1) Points

- ◉ True
- ○ False (*)

✖ Incorrect. Refer to Section 3 Lesson 1.

43. Interfaces define what?

☐ Mark for Review
(1) Points

- ○ some methods with implementations
- ◉ all methods with implementations
- ○ all method definitions without any implementations (*)
- ○ variables and methods
- ○ constants and all methods with implementations

✖ Incorrect. Refer to Section 3 Lesson 1.

44. A method with public access level can be subclassed by?

☐ Mark for Review
(1) Points

- ○ Only a subclass in the same package
- ◉ A subclass in any package
- ○ A static nested class
- ○ An instance nested class
- ○ None of the above. We cannot subclass a method in Java. (*)

✖ Incorrect. Refer to Section 3 Lesson 1.

45. Upward casting an object instance means you can't access subclass specific methods. True or false?

☐ Mark for Review
(1) Points

- ◉ True (*)
- ○ False

✔ Correct

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

1. Immutable classes can be subclassed.
   True or false?

   ◉ True
   ○ False (*)

   ❌ Incorrect. Refer to Section 3 Lesson 1.

   ☐ Mark for Review
   (1) Points

2. Calling a subclass method by referring to a superclass works because you have access to all specialized methods through virtual method invocation.
   True or false?

   ◉ True
   ○ False (*)

   ❌ Incorrect. Refer to Section 3 Lesson 1.

   ☐ Mark for Review
   (1) Points

3. The instanceof operator works inside an if statement.
   True or false?

   ◉ True (*)
   ○ False

   ✅ Correct

   ☐ Mark for Review
   (1) Points

4. A upward cast means all instance variables of the subclass are permanently lost to the instance.
   True or false?

   ◉ True
   ○ False (*)

   ❌ Incorrect. Refer to Section 3 Lesson 1.

   ☐ Mark for Review
   (1) Points

5. Upward casting an object instance means you can't access subclass specific methods.
   True or false?

   ◉ True (*)
   ○ False

   ✅ Correct

   ☐ Mark for Review
   (1) Points

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

6. Virtual method invocation occurs when you call a superclass method for a subclass with an overriding method of the same name.
   True or false?

   ☐ Mark for Review
   (1) Points

   ◉ True (*)
   ○ False

   ✔ Correct

7. Virtual method invocation requires that the superclass method is defined as which of the following.

   ☐ Mark for Review
   (1) Points

   ○ A public static method.
   ○ A private final method.
   ◉ A public method. (*)
   ○ A public final method.
   ○ A default final method.

   ✔ Correct

8. Immutable classes do allow instance variables to be changed by overriding methods.
   True or false?

   ☐ Mark for Review
   (1) Points

   ◉ True
   ○ False (*)

   ✘ Incorrect. Refer to Section 3 Lesson 1.

9. Classes can be made immutable by placing a final key word before all method implementations.
   True or false?

   ☐ Mark for Review
   (1) Points

   ◉ True (*)
   ○ False

   ✔ Correct

10. The instanceof operator only works with class instances.
    True or false?

    ☐ Mark for Review
    (1) Points

    ◉ True (*)
    ○ False

    ✔ Correct

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

11. A method with public access level can be subclassed by?

    ⦿ Only a subclass in the same package
    ⦿ A subclass in any package
    ◉ A static nested class
    ⦿ An instance nested class
    ⦿ None of the above. We cannot subclass a method in Java. (*)

    ❌ Incorrect. Refer to Section 3 Lesson 1.

☐ Mark for Review
(1) Points

12. A downward cast of a subclass lets you access a subclass specialized method call. True or false?

    ◉ True (*)
    ⦿ False

    ✅ Correct

☐ Mark for Review
(1) Points

13. Virtual method invocation occurs when you call a method from a superclass. True or false?

    ◉ True
    ⦿ False (*)

    ❌ Incorrect. Refer to Section 3 Lesson 1.

☐ Mark for Review
(1) Points

14. Multiple exceptions can be caught in one catch statement. True or false?

    ◉ True (*)
    ⦿ False

    ✅ Correct

☐ Mark for Review
(1) Points

15. When should you not use assertions?

(Choose all correct answers)

    ☐ When you want your program to execute efficiently
    ☑ When you want to check the values of parameters. (*)
    ☐ When you call methods that may cause side effects in your assertion check. (*)
    ☑ When you believe you have no bugs in your code.

    ❌ Incorrect. Refer to Section 3 Lesson 4.

☐ Mark for Review
(1) Points

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

16. What is an exception?

Mark for Review
(1) Points

  ◯ A consistent way of handling various errors. (*)
  ◉ An error that occurs against the flow of your program.
  ◯ When a file fails to open.
  ◯ If your program exits before you expect it to.

  ❌ Incorrect. Refer to Section 3 Lesson 4.

17. Assertions are boolean statements to test and debug your programs.
    True or false?

Mark for Review
(1) Points

  ◉ True (*)
  ◯ False

  ✔ Correct

18. In what order do multiple catch statements execute?

Mark for Review
(1) Points

  ◯ The order they are declared in (most specific first) (*)
  ◉ They all execute at the same time
  ◯ They order they are declared in (most general first)
  ◯ None of them execute since you can't have multiple catch statements.

  ❌ Incorrect. Refer to Section 3 Lesson 4.

19. When is the proper time to use exceptions?

Mark for Review
(1) Points

  ◯ When you want to print statements to the screen.
  ◉ When you want to efficiently and reliably debug your program. (*)
  ◯ If you purposefully put errors in your code you wish to handle.
  ◯ Every time a new method is called.

  ✔ Correct

20. What symbol is used to separate multiple exceptions in one catch statement?

Mark for Review
(1) Points

  ◯ &&
  ◯ (==) (equals equals)
  ◯ None, multiple exceptions can't be handled in one catch statement.
  ◉ A single bar: | (*)

  ✔ Correct

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

21. When do you use try-catch statements?

    ○ When you want to exit your code before an exception is caught.
    ◉ If you want to switch different values for a certain variable.
    ○ When you want to handle an exception. (*)
    ○ Every time you would like to assign a new value to a variable that is being asserted.

    ❌ Incorrect. Refer to Section 3 Lesson 4.

    ☐ Mark for Review
    (1) Points

22. Methods can not throw exceptions.
    True or false?

    ○ True
    ◉ False (*)

    ✔ Correct

    ☐ Mark for Review
    (1) Points

23. The java.nio.file package has improved exception handling.
    True or false?

    ◉ True (*)
    ○ False

    ✔ Correct

    ☐ Mark for Review
    (1) Points

24. The System.in is what type of stream?

    ○ A BufferedWriter stream
    ◉ A PrintStream
    ○ An InputStream (*)
    ○ A BufferedReader stream
    ○ A Reader stream

    ❌ Incorrect. Refer to Section 3 Lesson 5.

    ☐ Mark for Review
    (1) Points

25. The java.io package has problems with missing operations, like copy, move, and such.
    True or false?

    ◉ True (*)
    ○ False

    ✔ Correct

    ☐ Mark for Review
    (1) Points

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Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

26. Encoding an object into a stream is serialization.
True or false?

☐ Mark for Review
(1) Points

- ◉ True (*)
- ○ False

✔ Correct

27. The BufferedInputStream is a direct subclass of what other class?

☐ Mark for Review
(1) Points

- ○ InputStream
- ◉ FilterInputStream (*)
- ○ InputStream
- ○ FileInputStream
- ○ PipedInputStream

✔ Correct

28. The System.err writes standard output to the console.
True or false?

☐ Mark for Review
(1) Points

- ◉ True (*)
- ○ False

✔ Correct

29. Which of the following is an absolute Windows path?

☐ Mark for Review
(1) Points

- ○ /home/user/username
- ◉ /
- ○ \Users\UserName\data
- ○ C:\Users\UserName\data (*)
- ○ data

❌ Incorrect. Refer to Section 3 Lesson 5.

30. The BufferedOutputStream is a direct subclass of what other class?

☐ Mark for Review
(1) Points

- ◉ FilterOutputStream (*)
- ○ OutputStream
- ○ PrintStream
- ○ DigestOutputStream
- ○ ObjectOutputStream

✔ Correct

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

31. Split is a method for Strings that parses a string by a specified character, or, if unspecified, by spaces, and returns the parsed elements in an array of Strings.
True or false?

☐ Mark for Review
(1) Points

○ True
○ False (*)

❌ Incorrect. Refer to Section 3 Lesson 3.

32. Which of the following methods for the String class take a regular expression as a parameter and returns true if the string matches the expression?

☐ Mark for Review
(1) Points

○ equals(String regex)
⦿ equalsIgnoreCase(String regex)
○ compareTo(String regex)
○ matches(String regex) (*)

❌ Incorrect. Refer to Section 3 Lesson 3.

33. Which of the following methods are specific to StringBuilders?

☐ Mark for Review
(1) Points

○ append
○ delete
⦿ inssert
○ replace
○ All of the above. (*)

❌ Incorrect. Refer to Section 3 Lesson 3.

34. Which of the following correctly initializes a StringBuilder?

☐ Mark for Review
(1) Points

○ StringBuilder sb = "This is my String Builder";
⦿ StringBuilder sb = StringBuilder(500);
○ StringBuilder sb = new StringBuilder(); (*)
○ None of the above.

❌ Incorrect. Refer to Section 3 Lesson 3.

35. Consider that you are writing a program for analyzing feedback on the video game you have developed. You have completed everything except the segment of code that checks that the user's input, String userI, is a valid rating. Note that a valid rating is a single digit between 1 and 5 inclusive. Which of the following segments of code returns true if the user's input is a valid rating?

☐ Mark for Review
(1) Points

(Choose all correct answers)

☐ return userI.matches("[1-5]"); (*)
☑ return userI.matches("{1-5}");
☐ return userI.matches("[1-5].*");
☑ return userI.matches("[1-5]{1}"); (*)

❌ Incorrect. Refer to Section 3 Lesson 3.

Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

36. Which of the following does not correctly match the regular expression symbol to its proper function?

☐ Mark for Review
(1) Points

○ "{x}" means there must be x occurrences of the preceding character in the string to be a match.

○ "?" means there may be zero or one occurrences of the preceding character in the string to be a match.

◉ "+" means there may be zero or more occurrences of the preceding character in the string to be a match. (*)

○ "{x,}" means there may be x or more occurrences of the preceeding character in the string to be a match.

○ "{x,y}" means there may be between x and y occurrences of the preceding character in the string to be a match.

✔ Correct

37. Which of the following correctly defines Matcher?

☐ Mark for Review
(1) Points

○ a regular expression symbol that represents any character.

○ a method of dividing a string into a set of sub-strings.

◉ a class in the java.util.regex package that stores the matches between a pattern and a string. (*)

○ a class in the java.util.regex package that stores the format of a regular expression.

✔ Correct

38. Which of the following methods adds a Key-Value map to a HashMap?

☐ Mark for Review
(1) Points

◉ put(Key, Value) (*)

○ add(Key, Value)

○ get(Key, Value)

○ remove(Key, Value)

✔ Correct

39. Which of the following correctly adds "Cabbage" to the ArrayList vegetables?

☐ Mark for Review
(1) Points

○ vegetables += "Cabbage";

◉ vegetables.get("Cabbage");

○ vegetables[0] = "Cabbage";

○ vegetables.add("Cabbage"); (*)

✖ Incorrect. Refer to Section 3 Lesson 2.

40. A List is an ordered Collection that may contain duplicate elements. True or false?

☐ Mark for Review
(1) Points

◉ True (*)

○ False

✔ Correct

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

41. The local petting zoo is writing a program to be able to collect be able to group animals according to species to better keep track of what animals they have. Which of the following correctly defines a collection that may create these types of groupings for each species at the zoo?

☑ Mark for Review
(1) Points

- ⦿ public class
  animalCollection {...} (*)
- ◯ public class
  animalCollection(AnimalType T) {...}
- ◯ public class
  animalCollection {...}
- ◯ public class
  animalCollection(animalType) {...}
- ◯ None of the above.

✔️ Correct

42. A HashSet is a set that is similar to an ArrayList. A HashSet does not have any specific ordering. True or false?

☑ Mark for Review
(1) Points

- ⦿ True (*)
- ◯ False

✔️ Correct

43. Why can a LinkList be considered a stack and a queue?

☑ Mark for Review
(1) Points

(Choose all correct answers)

- ☐ Because you can add elements to the end of it. (*)
- ☑ Because you can add element to the beginning of it. (*)
- ☐ Because you can remove elements from the end of it. (*)
- ☑ Because you can remove elements from the beginning of it. (*)

❌ Incorrect. Refer to Section 3 Lesson 2.

44. These are a list of elements that have a first in last out ordering.

☑ Mark for Review
(1) Points

- ◯ Arrays
- ⦿ Stacks (*)
- ◯ HashMaps
- ◯ Enums

✔️ Correct

45. Which scenario best describes a stack?

☑ Mark for Review
(1) Points

- ◯ A pile of pancakes with which you add some to the top and remove them one by one from the top to the bottom. (*)
- ⦿ A row of books that you can take out of only the middle of the books first and work your way outward toward either edge.
- ◯ A line at the grocery store where the first person in the line is the first person to leave.
- ◯ All of the above describe a stack.

❌ Incorrect. Refer to Section 3 Lesson 2.

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Test: Java Programming Final Exam

Review your answers, feedback, and question scores below. An asterisk (*) indicates a correct answer.

Section 3
(Answer all questions in this section)

46. What are maps that link a Key to a Value?

      ☐ Mark for Review
      (1) Points

    ○ Arrays
    ◉ ArrayLists
    ○ HashSets
    ○ HashMaps (*)

    ❌ Incorrect. Refer to Section 3 Lesson 2.

47. Nodes are components of LinkedLists that are like maps because they identify where the next and previous nodes are.
True or false?

      ☐ Mark for Review
      (1) Points

    ◉ True (*)
    ○ False

    ✔️ Correct

48. What is wrong with the following declaration of the ArrayList of strings arr?
ArrayList(String) arr = new ArrayList(String)<>;

      ☐ Mark for Review
      (1) Points

(Choose all correct answers)

    ☐ Only the 1st occurrence of "(String)" should be replaced with ""
    ☑ The angled brackets "<>" need to be replaced with parenthesis "()" and parenthesis "()"need to be replaced by "<>" (*)
    ☐ Both occurences of "(String)" should be replaced with "" (*)
    ☐ Nothing, this declaration is correct.

    ❌ Incorrect. Refer to Section 3 Lesson 2.

49. Which of the following correctly defines a queue?

      ☐ Mark for Review
      (1) Points

    ○ a list of elements with a first in last out order.
    ◉ a list of elements with a first in first out order. (*)
    ○ something that enables you to create a generic class without specifying a type between angle brackets <>.
    ○ it is a keyword in Java that restrict the use of the code to local users only.

    ✔️ Correct

50. What is a set?

      ☐ Mark for Review
      (1) Points

    ○ something that enables you to create a generic class without specifying a type between angle brackets <>.
    ◉ a collection of elements that does not contain duplicates. (*)
    ○ a keyword in Java that initializes an ArrayList.
    ○ a collection of elements that contains duplicates.

    ✔️ Correct

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