

Test: Java Foundations Midterm Exam

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

Section 2

(Answer all questions in this section)

1. Which of the following are adequate definitions for components of the Spiral Model of Development? ☐ Mark for Review (1) Points

(Choose all correct answers)

- ☐ Develop: Collect all specified instructions
- ☐ Requirements: Start the development
- ☒ Design: Plan the approach (*)
- ☒ Test: Run the code and verify results (*)

☒ Correct

2. If the requirement step of the Spiral Model of development is forgotten, which of the following could occur? ☐ Mark for Review (1) Points

- ☐ Solutions seem elusive.
- ☐ The Program gives inaccurate results.
- ☐ Code becomes messy.
- ☒ Required software features are missing from the program. (*)

☒ Correct

3. A software feature may allow the user to perform a specific task. ☐ Mark for Review (1) Points

- ☒ True (*)
- ☐ False

☒ Correct

4. Which of the following language is called a procedural language? ☐ Mark for Review (1) Points

- ☐ Java C
- ☐ C++
- ☐ Java
- ☒ C (*)

☒ Correct

5. In the code example below, identify any methods: ☐ Mark for Review (1) Points

```
public class Employee {  
    public String name = " Duke";  
    public int empId = 12105;  
    public float salary;
```

```
public void displaySalary(){  
    System.out.println("Employee Salary: "+salary);  
}  
}
```

- ☒ displaySalary() (*)
- ☐ salary
- ☐ name
- ☐ empId

☒ Correct

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Section 2

(Answer all questions in this section)

6. There are several fields and methods in a Shirt class. Which of the following could be a method in the Shirt class? ☐

Mark for Review
(1) Points

- ☐ size
- ☐ price
- ☐ color
- ☒ getShirtSize() (*)

☒ Correct

7. Which of the following two features are supported by the NetBeans IDE. ☐

Mark for Review
(1) Points

(Choose all correct answers)

- ☒ NetBeans provides a shortcut to format whitespace. (*)
- ☒ NetBeans highlights matching braces. (*)
- ☐ Once NetBeans spots a problem, it won't allow you to continue coding until the problem is fixed.
- ☐ NetBeans automatically runs the program once all the braces in the code are matched.

☒ Correct

8. Which of the following are considered Whitespace? ☐

Mark for Review
(1) Points

(Choose all correct answers)

- ☒ Blank lines in the code. (*)
- ☐ Space in the print statements.
- ☒ Space between words. (*)

- ☒ Indentation before the code. (*)
- ☐ Space between the [] braces.

☒ Correct

9. A breakpoint can be set by clicking a number in the left margin of the IDE. Clicking again removes the breakpoint.

☐ Mark for Review
(1) Points

- ☒ True (*)
- ☐ False

☒ Correct

Section 3

(Answer all questions in this section)

10. Assigning a value to the variable is called "initialization".

☐ Mark for Review
(1) Points

- ☒ True (*)
- ☐ False

☒ Correct

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Section 3

(Answer all questions in this section)

11. Which of the following two statements are true about variables?

☐ Mark for Review
(1) Points

(Choose all correct answers)

- ☐ The value assigned to a variable may never change.
- ☒ They allow code to be edited more efficiently. (*)
- ☐ Variables will be ignored by compiler.
- ☒ They make code becomes flexible. (*)

☒ Correct

12. Identify the variable declared in the given code.

☐ Mark for Review
(1) Points

```
public class Welcome {  
    public static void main(String args[]) {  
        int a = 2;  
        System.out.println("a is" + a);  
    }  
}
```

- ☒ a (*)

- ☐ 2
- ☐ int
- ☐ Welcome

☒ Correct

13. A character preceded by backslash is called an escape sequence.



Mark for Review
(1) Points

- ☒ True (*)
- ☐ False

☒ Correct

14. An Object cannot have String objects as properties.



Mark for Review
(1) Points

- ☐ True
- ☒ False (*)

☒ Correct

15. Given the expression:



Mark for Review
(1) Points

`String message = "Hello World";`

Which is the String Literal?

- ☐ message
- ☐ String message
- ☒ Hello World (*)
- ☐ String message = "Hello World";

☒ Correct

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Section 3

(Answer all questions in this section)

16. What is the output? `public static void main(String args[]) {
int x = 100;
int y = x;
y++;
System.out.println("Value of x is " + x);
System.out.println("Value of y is " + y);
}`



Mark for Review
(1) Points

- ☐ Value of x is 0
Value of y is 1
- ☐ Value of x is 100
Value of y is 1

- ☐ Value of x is 100
Value of y is 1
- ☒ Value of x is 100
Value of y is 101 (*)

☒ Correct

17. Assuming x is an int, which of the following are ways to increment the value of x by 1? ☐

Mark for Review
(1) Points

(Choose all correct answers)

- ☒ `x = x + 1; (*)`
- ☐ `x = +1;`
- ☐ `x+;`
- ☒ `x++; (*)`
- ☒ `x += 1; (*)`

☒ Correct

18. What is the range of the byte data type? ☐

Mark for Review
(1) Points

- ☒ -2^7 to 2^7-1 (*)
- ☐ -2^{15} to $2^{15}-1$
- ☐ -2^{31} to $2^{31}-1$
- ☐ -2^{63} to $2^{63}-1$

☒ Correct

19. It's best-practice to close the Scanner stream when finished ☐

Mark for Review
(1) Points

- ☒ True (*)
- ☐ False

☒ Correct

20. Which two statements are true about the Scanner class? ☐

Mark for Review
(1) Points

(Choose all correct answers)

- ☒ A Scanner object opens a stream for collecting input. (*)
- ☐ Scanners cannot read text files.
- ☒ A Scanner's delimiter can be changed. (*)
- ☐ A Scanner object doesn't have fields and methods.

☒ Correct

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Section 3

(Answer all questions in this section)

21. These two code fragments perform the same task.



Mark for Review
(1) Points

```
// Fragment 1
String inputString = JOptionPane.showInputDialog("??");
int input = Integer.parseInt(inputString);
input++;
```

```
// Fragment 2
int input = Integer.parseInt(JOptionPane.showInputDialog("??")) + 1;
```

- ☐ True (*)
☒ False

 Incorrect. Refer to Section 3 Lesson 5.

22. The Java compiler automatically promotes byte, short, and chars data type values to int data type.



Mark for Review
(1) Points

- ☒ True (*)
☐ False

 Correct

23. When the result of an expression is assigned to a temporary memory location, what is the size of memory allocated?



Mark for Review
(1) Points

- ☒ The size of the any data type used in the expression.
☐ The size of the smallest data type used in the expression.
☐ The size of the largest data type used in the expression. (*)
☐ A default size is allocated.

 Incorrect. Refer to Section 3 Lesson 4.

24. A short data type can be promoted to which of the following types?



Mark for Review
(1) Points

(Choose all correct answers)

- ☒ double (*)
☒ long (*)
☒ int (*)
☐ boolean
☐ byte

 Correct

Section 4

(Answer all questions in this section)

25. String objects are immutable.



Mark for Review

(1) Points

☒ True (*)

☐ False

☒ Correct

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Section 4

(Answer all questions in this section)

26. What is the output?



Mark for Review
(1) Points

```
public static void main(String args[]) {  
    String alphaNumeric = "Java World!" + 8;  
    System.out.println(alphaNumeric);  
}
```

☐ Java World! + 8

☐ Java World! 8

☒ Java World!8 (*)

☐ Compilation error.

☒ Correct

27. The replaceFirst() method replaces only the first occurrence of matching character pattern in a string.



Mark for Review
(1) Points

☒ True (*)

☐ False

☒ Correct

28. The indexOf() method returns the index value of a character in the string.



Mark for Review
(1) Points

☒ True (*)

☐ False

☒ Correct

29. What is the approximate value of PI?



Mark for Review
(1) Points

☐ 0

☒ 3.141 (*)

☐ The value varies.

☐ 2.718

☒ Correct

30. What is the package name which contains Math class?



Mark for Review
(1) Points

- ☒ java.lang (*)
- ☐ java.io
- ☐ java.net
- ☐ java.awt

☒ Correct

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Section 4

(Answer all questions in this section)

31. Using the Random class requires an import statement.



Mark for Review
(1) Points

- ☒ True (*)
- ☐ False

☒ Correct

32. Which class is used to generate random numbers?



Mark for Review
(1) Points

- ☐ Integer
- ☒ Random (*)
- ☐ Number
- ☐ Double

☒ Correct

33. You need to generate random integer values between 0 and 80 (inclusive). Which statement should you use?



Mark for Review
(1) Points

- ☐ nextInt(0-79);
- ☐ nextInt(80);
- ☐ nextInt();
- ☒ nextInt(81); (*)

☒ Correct

34. Which of the following two operations are appropriate for the main method?



Mark for Review
(1) Points

(Choose all correct answers)

- ☒ Creating instances of objects (*)
- ☐ Calling local variables declared within a class's method
- ☒ Calling an instance object's field and methods. (*)
- ☐ Assigning memory to the variables

☒ Correct

35. You're designing banking software and need to store 10000 customer accounts with information on the accountholder's name, balance, and interest rate. The best approach is store 30000 separate variables in the main method.



Mark for Review
(1) Points

- ☐ True
- ☒ False (*)

☒ Correct

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Section 4

(Answer all questions in this section)

36. Methods allow all instance of a class to share same behaviors.



Mark for Review
(1) Points

- ☒ True (*)
- ☐ False

☒ Correct

37. How many arguments does the following method accept?



Mark for Review
(1) Points

```
public void simpleInterest(double principal, int noofYears, double interestRate){  
    System.out.println("The interest rate is " +interestRate );  
}
```

- ☒ 3 (*)
- ☐ 2
- ☐ 0
- ☐ 1

☒ Correct

38. Which is a risk of using fully qualified class names when importing?



Mark for Review
(1) Points

- ☐ Performance of the code is reduced.
- ☒ Code readability is reduced. (*)

- ☐ Memory usage is increased.
- ☐ The compiler runs longer.

☒ Correct

39. Which two are valid import statements of the Scanner class?



Mark for Review
(1) Points

(Choose all correct answers)

- ☒ import java.util.Scanner; (*)
- ☐ import java.*;
- ☐ import java.util;
- ☒ import java.util.*; (*)

☒ Correct

40. The import statement consists of two parts.



Mark for Review
(1) Points

import package.className;

One is the package name and the other is the classname.

- ☒ True (*)
- ☐ False

☒ Correct

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Section 4

(Answer all questions in this section)

41. The classes of the Java class library are organized into packages.



Mark for Review
(1) Points

- ☒ True (*)
- ☐ False

☒ Correct

Section 5

(Answer all questions in this section)

42. How should Strings be compared?



Mark for Review
(1) Points

- ☒ The equals() method (*)
- ☐ ~=
- ☐ ==
- ☐ =

☒ Correct

43. Which operator is used to test if both sides of a boolean expression are equal?



Mark for Review
(1) Points

- ☒ == (*)
- ☐ >=
- ☐ <=
- ☐ =

☒ Correct

44. The equal sign (=) is used to make an assignment, whereas the == sign merely makes a comparison and returns a boolean.



Mark for Review
(1) Points

- ☒ True (*)
- ☐ False

☒ Correct

45. What is the output?



Mark for Review
(1) Points

```
public static void main(String[] args) {  
    int age = 43;  
    if (age == 43){  
        System.out.print("Bob is 43 ");  
    }  
    if (age == 50){  
        System.out.print("Bob is 50 ");  
    }  
}
```

- ☐ Bob is 43 Bob is 50
- ☐ No output
- ☒ Bob is 43 (*)
- ☐ Bob is 50

☒ Correct

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Section 5

(Answer all questions in this section)

46. In Java, an if statement can be nested inside another if statement.



Mark for Review
(1) Points

- ☒ True (*)
- ☐ False

☒ Correct

47. In a boolean expression which uses the && operator, what would make this expression evaluate to true?



Mark for Review
(1) Points

`boolean x = (firstCondition && secondCondition);`

- ☐ If both the first condition and second condition are false
- ☒ If both the first condition and second condition are true (*)
- ☐ If the first condition is false, but the second condition is true
- ☐ If the first condition is true, but the second condition is false

☒ Correct

48. Which two are not logical operators?



Mark for Review
(1) Points

(Choose all correct answers)

- ☒ % (*)
- ☒ + (*)
- ☐ &&
- ☐ ||
- ☐ !

☒ Correct

49. A break statement causes control to transfer to the end of the switch statement.



Mark for Review
(1) Points

- ☒ True (*)
- ☐ False

☒ Correct

50. What is the output?



Mark for Review
(1) Points

```
public static void main(String args[]) {  
    char ch = 'c';  
    switch(ch) {  
        case 'a':  
        case 'e':  
        case 'i':  
        case 'o':  
        case 'u':  
            System.out.println("Vowels");  
            break;  
        default:  
            System.out.println("Consonants");  
    }  
}
```

- ☐ Compilation error
- ☐ Vowels
- ☒ Consonants (*)
- ☐ Vowels

 Correct

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