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| **APCS Exposure Java** | **Exercises 03.07-12** | **Date:** |
| **Name: KEY** | | **Period:** |

1. Which data type is used to process individual characters?

*char*

2. Which data type is used to process sets of one or more characters?

*String*

3. What kind of *quotes* are used with strings?

*Double Quotes*

4. What kind of *quotes* are used with individual characters?

*Single Quotes*

5. In program ***Java0313.java***, what is accomplished by the statement: **c1 = c2 = c3 = 'Q';** ?

*Every variable is assigned the value of Q.*

6. Refer to the previous question. What is the name for this type of short cut?

*chain assignment* or *chaining*

7. What is the fancy name for using the plus ( + ) sign to join strings together?

*Concatenation*

8. The plus ( + ) sign can be used to add integers and real numbers. It can also be used to join strings.

What is it called when one operator can perform different functions.

*Overloading*

9. What is **“2” + “3”** ?

*23*

10. Who invented a form of Algebra based on logical statements that are either **true** or **false**?

*George Boole*

11. Today, in computer science, a data type that has only two values of **true** and **false** is a called a \_\_\_\_\_\_\_ data type.

*boolean*

12. What is Java’s formal language for the term *simple data types*?

*primitive*

13. Say you want to use the mathematical value of **E** (another non-repeating decimal similar to **PI**) in your program with value of **2.718281828**. This value will never change in your program.

Print the proper way to define and initialize this constant.

*final double E = 2.718281828;*

14. What are the 4 data types that will be tested on the AP Exam?

*int, double, boolean and String*

15. What happens when you attempt to alter the value of a *constant*?

*It causes a compile error.*

16. What does Java call *constants*?

*final variables*

17. What is the first form of *program documentation*?

*to use comments*

18. Why were computer programs in the 1960s and the 1970s often written with single-letter variables?

*Computer memory was scarce and very expensive.*

*Programmers had to do anything they could save every byte possible.*

19. What is a *self-commenting variable*?

*A self-commenting variable is a variable whose name describes what the variable is used for.*

20. Look at programs ***Java0317.java*** and ***Java0318.java***. Both programs do the exact same thing.

Why is the second program so much easier to understand?

*The second program uses self-commenting variables.*

*The first program uses single-letter variables.*

21. The age of single-letter variables is gone. Variables should now be \_\_\_\_\_\_\_ or \_\_\_\_\_\_\_.

*words or compound words*

22. Suppose you are writing a program to compute the average of a list of numbers.

What name should you give the variable that stores the **average**?

*average*

23. In a well-documented program, are *single-line comments* or *multi-line comments* necessary in a program that already uses good *­self-commenting variables*?

*Yes*

24. Does Java follow the same *Order of Operations* that you learned in your Math class?

*Yes*

25. Translate **7abc** into Java source code.

*7 \* a \* b \* c*

**x + 3**

26. Translate ————— into Java source code.

**2x - 7**

*(x + 3) / (2 \* x - 7)*

27. Translate “one half” into Java source code.

*1.0 / 2.0 or 0.5*

28. What is the output of: **System.out.println( 10 / 3 );** ?

*3*

29. What is the output of: **System.out.println( (double) 10 / 3 );** ?

*3.33333333333333*

30. What is an *escape sequence*?

*A special set of characters, starting with /, that means something to print, like \n*

31. What does the escape sequence **\n** do?

*carriage return, line feed*

32. What escape sequence is used to generate a <tab>?

*\t*

33. Why do we need escape sequences to generate backslash ( **\** ) and quote ( **"** ) characters?

*It prevents confusion to the compiler*