4009 DSA – Test 1 Solutions

Part A: Multiple Choice Questions

1	2	3	4	5	6	7	8	9	10
A	C	B	E	E	E	A	D	E	B

11	12	13	14	15	16	17	18	19	20
B	C	B	C	B	A	D	E	A	A

Part B: Short Answer Questions

21. Any of the three definitions:
   I. A local variable is visible only within the statement block or scope of a method or constructor.
   II. A variable declared inside the body of the method.
   III. A local variable belongs to a function or within a block of code to which it is declared.

22. Any of the two declaration is correct:
   String Name = "Jerome Semos";
   Sting Name = "Your full name"

23. System.out.println(Name);

24. A ***data structure*** is an arrangement of data in a computer's memory (or disk). Data structure include arrays, linked lists, stacks, binary trees and hash tables, etc.

25. An ***algorithm*** provides a set of instructions for manipulating data in structures. Algorithm involve searching particular data or sorting the data

26. Any of the two definitions:
   • Methods are chunks of code that can be called on a particular object.
   • A method is a block of code which only runs when it is called.

27. Casting is an operation that allows programmers to change the type of a value. Example cast from integer to double.

28. The throw statement allows you to create a custom error. The throw statement is used together with an exception type defined by Java (examples ArithmeticException, FileNotFoundException, ArrayIndexOutOfBoundsException, SecurityExcepti on)

29. a: Class declaration – class is called Test1 and modifier is public providing access to all objects and methods in the class.

b: Main method declaration – this is main method used for simple input and output of the program.

c: while loop – this loop runs if the value of i is greater than 5

d: print to the console or system out statement – it outputs all the best in your test, students

e: decrement statement – the value of I is decreased by 1 every time the while loop runs

f: Due to poor labelling either of the answers is correct.

closing brace – end the statement block of the class or closes the class declaration.

closing brace – end the statement block of the main method or closes the main method declaration.

30. All the best in your test, students
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