HOMEWORK 5
JAVA LOOP CONSTRUCTS

Question	Answer	Explanation
1	D	While loop is best known for its Boolean condition that controls entry to the loop. It returns true or false after controlling the situation and entering the loop or not.
2	B	For (traditional) loop is best known for using an index or counter. Before entering the loop, for loop checks the situation.
3	A	Do-while loop is guaranteed to have the body execute at least once. It checks the loop situation after execution of the loop body.
4	C	For-each can loop through an array without referring to the elements by index. This loop goes each elements and store it in a variable.
5	B	"continue" is used to end the current loop iteration and proceed execution with the next iteration of that loop.
6	A	"break" is used to proceed with execution immediately after a loop.
7	B	For (traditional) has three segments within parenthesis. These are initialization statement, condition statement and update statement.
8	C	If developer wants, for loop can iterate through an array starting from index 0 or index 1 and iterate through an array starting from the end.
9	A	If developer wants, for-each loop can iterate through an array startin from index 0 or index 1. It depends on you.
10	A	Do-while loop has a Boolean condition that is first checked after a single iteration through the loop.
11	B	The code does not compile because "single" variable is integer. While loop checks boolean conditions.
12	B	There is no error in code so output will be "cup, can," because it goes to the first index from the last index in the list.
13	A	"glass" is the 0 index and "plastic" is the 1st index in the list so output is "glass" end of the for loop. After that it prints "end". Finally, output is "glass, end".
14	A	In the beginning, letters' length is 0 so it's not equal to 2 and it enters the loop inside. letters' length becomes 1 with assigning "a" in the loop body. Length of the letters changes again with the increase so it is 2 and contains "aa" now. When length is equal to 2, it does not print anymore letter so output is "aa".
15	D	This is an infinite loop because in the beginning, args is equal to 3 and it increases again and again. To break the loop, "i" must decrease.
16	B	End of the first iteration of the loop, count is set to 1 because "Washington" has 11 characters and body statement does not work. In the second iteration count is set to 2. "Monroe" has 6 characters so break statement will work and output will be 2.
17	C	The code does not compile. The count variable is declared inside the loop. It is not in scope after the loop where it is referenced by the println().
18	D	A for loop is allowed to have all three segments left blank. In fact, for (;;) {} is an infinite loop.
19	C	Creating an infinite loop using a for-each loop is not possible because it loops through an array or ArrayList. While, do while and traditional for allows to create an infinite loop.
20	A	Output is "can, cup," because it starts from index 0 to the last index in the list. Index 0 is "can" and Index 1 is "cup".
21	D	The code does not compile because parentheses are not allowed to surround a loop body though.
22	B	for(String f : fun) System.out.println(f) is the correct syntax for the for-each loop.
23	C	To end the loop for this situation, we can use "break" and "break numbers".
24	B	The "continue letters" ends the inner loop and resume execution at the letters label.
25	C	The loops completes with no output because it does not enter while loop's body part.
26	C	StringBuilder is not an allowed type for the for-each loop.
27	B	When if statement executes, it prints "inflate-". Then the loop condition is checked again and it prints "done".
28	D	This is an infinite loop because letters never will be 3. It increases always by two characters so it is not possible that equal to 3 characters.
29	B	Initialization expression, boolean conditional and update statement describe the order in the three expressions appear in the for loop.
30	B	First Iteration: chars 1 element, count is equal to 9 Second Iteration: chars 2 element, count is equal to 7

		Third Iteration: chars 3 element, count is equal to 4 Fourth Iteration: chars 4 element, count is equal to 0 so output is “4”.
31	A	First iteration: i is equal to 10 In the loop: i is equal to 7 by subtracting 3. After that i is equal to 4 by subtracting 3. Next, i is equal to 1 by subtracting 3. Then k is finally incremented to 1 from 0.
32	D	Option D is correct because Option A and Option C do not compile. Option B is only able to go through an array in ascending order.
33	C	The code does not compile because of the syntax error. Break statement must be in the loop.
34	C	The code does not compile because multiple update expression are separated with a comma but it must be a semicolon.
35	D	It throws an ArrayIndexOutOfBoundsException because there is no args[3]. Indexes are starting from 0.
36	B	tie is a boolean variable and it is assigned to null. While loop checks the situation and it enters the loop body. Tie is assigned to “shoelace” and it is printed.
37	C	The code does not compile because while the label is still present, it no longer points to a loop.
38	C	The output is “4”. Count increments for each element of the array.
39	C	The code does not compile. The builder is a StringBuilder variable and it is not a Boolean so it does not work. It must be Boolean variable to work because do-while loop requires a Boolean condition.
40	A	Line 6: count is set to 0. Line 9: count is set to 1. Line 10: the condition runs and count is less than 2. Next Iteration: count is set to 2. Line 10: other condition runs and returns false. Line 11: outer loop runs and sends execution to after the loop on line 13. Count is still equal to 2.
41	C	“break t;” is correct answer because it breaks out of both loops.
42	B	Output is “Downtown Day-Uptown Night-”. It initializes two variables and uses both variables in the condition check and the update statements. Since it checks the size of both arrays correctly, it prints the first two sets of elements.
43	B	Output is “4”. The outer loop executes 2 times and inner loop also executes 2 times for each of those iterations of the outer loop so the inner loop executes four times.
44	B	The initializer runs first so alpha is the first. Then condition is checked so beta is the second. If beta returns false, loop is never entered.
45	B	The initializer runs first so alpha is the first. Then condition is checked so beta is the second. Then loop body runs so delta is the third. After the loop execution, updater runs so gamma is the fourth. If beta returns false, loop is never entered so beta is the fifth.
46	C	Option A’s output: 0, 1, 2, 3, 4. Option B’s output: 1, 2, 3, 4, 5. Option D’s output: 0, 1, 2, 3, 4. However Option C goes six iterations because loop condition is at the end of the loop.
47	D	Answer is the None of the above. Variable tie is assigned to null. The loop body is empty so tie cannot be settled. Therefore, this is an infinite loop.
48	C	The code does not compile because the label of the loop is trying to use the keyword for.
49	D	This is an infinite loop. First iteration: printing “inflate-” Loop condition is checked and the variable baloonInflated is true so loop condition is true and loop continues. The if statement no longer runs, but the variable never changes state again so the loop does not stop.
50	B	In the for loop, initialization expression is required. A comma separates multiple variables because they are part of the same statement. Answer is “int i=0, j=0;”.

Reference

Scott S, Jeanne B.: OCA/OCP Java SE 8 Programmer Practice Tests. Indiana, USA: 2017.