**Array**

**1. In Java arrays are**

A. objects

B. object references

C. primitive data type

D. None of the above

**Answer: Option A**

In java an **array** is a container object that holds a fixed number of values of a single type. The length of an array is established when the array is created. After creation, its length is fixed.

**2. Which one of the following is a valid statement?**

A. char[] c = new char();

B. char[] c = new char[5];

C. char[] c = new char(4);

D. char[] c = new char[];

**Answer: Option B**

The syntax for declaring and creating an array variable in java is:  
dataType[] arrayRefVar = new dataType[arraySize];  
  
Thus, option (A) and option (C) is syntactically wrong as parentheses( **( )** ) is used instead of square brackets( **[ ]** ).  
Option (D) is incorrect as the size of the array is missing.

**3. What is the result of compiling and running the following code?**

**public class Test{**

**public static void main(String[] args){**

**int[] a = new int[0];**

**System.out.print(a.length);**

**}**

**}**

A. 0

B. Compilation error, arrays cannot be initialized to zero size.

C. Compilation error, it is a.length() not a.length

D. None of the above

**Answer: Option A**

**4. What will be the output?**

**public class Test{**

**public static void main(String[] args){**

**int[] x = new int[3];**

**System.out.println("x[0] is " + x[0]);**

**}**

**}**

A. The program has a compile error because the size of the array wasn't specified when declaring the array.

B. The program has a runtime error because the array elements are not initialized.

C. The program runs fine and displays x[0] is 0.

D. The program has a runtime error because the array element x[0] is not defined.

**Answer: Option C**

Program is syntactically correct, so no error.  
In java, if the array is not initialized at the time of declaration and creation then all the elements of the array are initialized to 0 by default.

**5. What is the output of the following code?**

**public class Test{**

**public static void main(String args[]){**

**double[] myList = {1, 5, 5, 5, 5, 1};**

**double max = myList[0];**

**int indexOfMax = 0;**

**for(int i = 1; i < myList.length; i++){**

**if(myList[i] > max){**

**max = myList[i];**

**indexOfMax = i;**

**}**

**}**

**System.out.println(indexOfMax);**

**}**

**}**

A. 0

B. 1

C. 2

D. 3

E. 4

**Answer: Option B**

In the given program.  
Line 7 : if(myList[i] > max) execute only on time when i =1;  
when i = 1 then myList[i] = 5 and max = 1(**so the statement is true and if block will be executed**).  
Then, **max** = myList[i] = 5 and **indexOfMax** = i = 1.  
After that **if** statement always false. so **indexOfMax** value remain 1.  
  
Therefore the value of **indexOfMax is 1** at end of the for loop.

**6. What is output of the following code:**

**public class Test{**

**public static void main(String[] args){**

**int[] x = {120, 200, 016 };**

**for(int i = 0; i < x.length; i++)**

**System.out.print(x[i] + " ");**

**}**

**}**

A. 120 200 16

B. 120 200 14

C. 120 200 016

D. 016 is a compile error. It should be written as 16.

**Answer: Option B**

016 is an octal number. The prefix 0 indicates that a number is in octal.

**7. Determine output:**

**public class Test{**

**public static void main(String[] args){**

**int[] x = {1, 2, 3, 4};**

**int[] y = x;**

**x = new int[2];**

**for(int i = 0; i < x.length; i++)**

**System.out.print(y[i] + " ");**

**}**

**}**

A. 1 2 3 4

B. 0 0 0 0

C. 1 2

D. 0 0

E. None of these

**Answer: Option C**

**8. Analyze the following code and choose the correct answer.**

**int[] arr = new int[5];**

**arr = new int[6];**

A. The code has compile errors because the variable arr cannot be changed once it is assigned.

B. The code has runtime errors because the variable arr cannot be changed once it is assigned.

C. The code can compile and run fine. The second line assigns a new array to arr.

D. The code has compile errors because we cannot assign a different size array to arr.

**Answer: Option C**

**9.What will be the output?**

**public class Test{**

**public static void main(String[] args){**

**int[] a = new int[4];**

**a[1] = 1;**

**a = new int[2];**

**System.out.println("a[1] is " + a[1]);**

**}**

**}**

A. The program has a compile error because new int[2<sp< p=""> </sp<>

B. The program has a runtime error because a[1

C. a[1] is 0

D. a[1] is 1

**Answer: Option C**

# After executing the statement a = **new int**[2], a refers to int[2]. The default value for a[0] and a[1] is 0. **10. When you pass an array to a method, the method receives \_\_\_\_\_\_\_\_ .**

A. A copy of the array.

B. A copy of the first element.

C. The reference of the array.

D. The length of the array.

**Answer: Option C**

**11. What would be the result of attempting to compile and run the following code?**

**public class HelloWorld{**

**public static void main(String[] args){**

**double[] x = new double[]{1, 2, 3};**

**System.out.println("Value is " + x[1]);**

**}**

**}**

A. The program has a compile error because the syntax new double[]{1, 2, 3} is wrong and it should be replaced by {1, 2, 3}.

B. The program has a compile error because the syntax new double[]{1, 2, 3} is wrong and it should be replaced by new double[3]{1, 2, 3};

C. The program has a compile error because the syntax new double[]{1, 2, 3} is wrong and it should be replaced by new double[]{1.0, 2.0, 3.0};

D. The program compiles and runs fine and the output

**Answer: Option D**

new double[]{1, 2, 3} is correct. This is the syntax I have not covered in this edition, but will be covered in the future edition. In this question, double[] x = new double[]{1, 2, 3} is equivalent to double[] x = {1, 2, 3};

**12. Which will legally declare, construct, and initialize an array?**

A. int [] myList = {};

B. int [] myList = (5, 8, 2);

C. int myList [] [] = {4,9,7,0};

D. int myList [] = {4, 3, 7};

**Answer: Option D**

The only legal array declaration and assignment statement is Option D  
Option A is wrong because it initializes an int array with **String** literals.  
Option B is wrong because it uses something other than curly braces for the initialization.  
Option C is wrong because it provides initial values for only one dimension, although the declared array is a two-dimensional array.

**13. What will be the output of the program?**

**public class Test{**

**public static void main(String [] args){**

**String s1 = args[1];**

**String s2 = args[2];**

**String s3 = args[3];**

**String s4 = args[4];**

**System.out.print(" args[2] = " + s2);**

**}**

**}**

**and the command-line invocation is C:Java> java Test 1 2 3 4**

A. args[2] = 2

B. args[2] = 3

C. args[2] = null

D. An exception is thrown at runtime.

**Answer: Option D**

An exception is thrown because in the code String s4 = args[4];, the array index (the fifth element) is out of the bounds. The exception thrown is the **ArrayIndexOutOfBoundsException**.

**14. What is the value of a[1] after the following code is executed?**

**int[] a = {0, 2, 4, 1, 3};**

**for(int i = 0; i < a.length; i++)**

**a[i] = a[(a[i] + 3) % a.length];**

A. 0

B. 1

C. 2

D. 3

E. 4

**Answer: Option B**

when i = 0;  
a[i] = a[(a[i]+3)%a.length] //a.length =5;  
a[0] = a[(a[0]+3)%5];  
a[0] = a[(0+3)%5] ; // 3  
a[0] = a[3] = 1  
when i = 1;  
a[1]=a[(a[1]+3)%5];  
a[1]=a[(2+3)%5];  
a[1]=a[0];  
a[1]=1;  
**Therefore a[1] is equal to 1**