Question And Answer

Q.1 What is the output of this program?

```
classmainclass {
public static void main(String args[])
      {
char a = 'A';
a++;
 System.out.print((int)a);
      }
   }
```

A. 66
B. 67
C. 65
D. 64

ANSWER : Option A 66
SOLUTION :
ASCII value of 'A' is 65, on using ++ operator character value increments by one.
output:

```
$ javac mainclass.java
$ javamainclass
66
```

Q.2 What will be the output of the program?

```
public class CommandArgs
{
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

```
>javaCommandArgs 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 at runtime.
SOLUTION :
An exception is thrown because in the code String s4 = args[4];, the array index (the fifth element) is out of bounds. The exception thrown is the cleverly named

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ArrayIndexOutOfBoundsException.

Q.3 Which three are valid declarations of a float?
float f1 = -343;
float f2 = 3.14;
float f3 = 0x12345;
float f4 = 42e7;
float f5 = 2001.0D;
float f6 = 2.81F;

A. 1, 2, 4
B. 2, 3, 5
C. 1, 3, 6
D. 2, 4, 6

ANSWER : Option C 1, 3, 6
SOLUTION :
(1) and (3) are integer literals (32 bits), and integers can be legally assigned to floats (also 32 bits). (6) is correct because (F) is appended to the literal, declaring it as a float rather than a double (the default for floating point literals).
(2), (4),and (5) are all doubles.

Q.4 What will be the output of the program?

```
public class CommandArgsTwo
{
public static void main(String [] argh)
   {
int x;
      x = argh.length;
for (int y = 1; y <= x; y++)
      {
System.out.print(" " + argh[y]);
      }
   }
}
```

and the command-line invocation is
>javaCommandArgsTwo 1 2 3

A. 0 1 2
B. 1 2 3
C. 0 0 0
D. An exception is thrown at runtime

ANSWER : Option D An exception is thrown at runtime
SOLUTION :
An exception is thrown because at some point in (System.out.print(" " + argh[y]);), the value

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of x will be equal to y, resulting in an attempt to access an index out of bounds for the array. Remember that you can access only as far as length - 1, so loop logical tests should use x <someArray.length as opposed to x < = someArray.length.

Q.5 What is the output of this program?

```
class increment {
public static void main(String args[])
        {
int g = 3;
System.out.print(++g * 8);
        }
    }
```

A. 25
B. 24
C. 32
D. 33

ANSWER : Option C 32
SOLUTION :
Operator ++ has more preference than *, thus g becomes 4 and when multiplied by 8 gives 32.
output:

```
$ javac increment.java
$ java increment
32
```

Q.6

```
public class F0091
{
public void main( String[] args )
    {
System.out.println( "Hello" + args[0] );
    }
}
```

What will be the output of the program, if this code is executed with the command line:
>java F0091 world

A. Hello
B. Hello Foo91
C. Hello world
D. The code does not run.

ANSWER : Option D The code does not run.
SOLUTION :
D is correct. A runtime error will occur owning to the main method of the code fragment not

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being declared static:
Exception in thread "main" java.lang.NoSuchMethodError: main
The Java Language Specification clearly states: "The main method must be declared public, static, and void. It must accept a single argument that is an array of strings."

Q.7 What is the output of this program?

```
class variable_scope {
public static void main(String args[])
        {
int x;
           x = 5;
           {
 int y = 6;
 System.out.print(x + " " + y);
           }
System.out.println(x + " " + y);
        }
    }
```

A. 5 6 5 6
B. 5 6 5
C. Runtime error
D. Compilation error

ANSWER : Option D Compilation error
SOLUTION :
Second print statement doesn't have access to y , scope y was limited to the block defined after initialization of x.
output:
$ javac variable_scope.java
Exception in thread main java.lang.Error: Unresolved compilation problem: y cannot be resolved to a variable

---

Q.8 Which of these coding types is used for data type characters in Java?
A. ASCII
B. ISO-LATIN-1
C. UNICODE
D. None of the mentioned

ANSWER : Option C UNICODE
SOLUTION :
Explanation: Unicode defines fully international character set that can represent all the characters found in all human languages. Its range is from 0 to 65536.

Q.9 Which is a valid keyword in java?
A. interface

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B. string
C. Float
D. unsigned

ANSWER : Option A interface
SOLUTION :
interface is a valid keyword.
B is wrong because although "String" is a class type in Java, "string" is not a keyword.
C is wrong because "Float" is a class type. The keyword for the Java primitive is float.
D is wrong because "unsigned" is a keyword in C/C++ but not in Java.a

---

Q.10 What is the output of this program?

```
class area {
public static void main(String args[])
      {
double r, pi, a;
          r = 9.8;
          p1 = 3.14;
          a = pi * r * r;
System.out.println(a);
      }
   }
```

A. 301.5656
B. 301
C. 301.56
D. 301.56560000

ANSWER : Option A 301.5656
SOLUTION :
output:

```
$ javac area.java
$ java area
301.5656
```

Q.11 What is the output of this program?

```
classdynamic_initialization {
public static void main(String args[])
      {
double a, b;
          a = 3.0;
          b = 4.0;
 double c = Math.sqrt(a * a + b * b);
 System.out.println(c);
      }
   }
```

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A. 5.0
B. 25.0
C. 7.0
D. Compilation Error

ANSWER : Option A 5.0
SOLUTION :
Variable c has been dynamically initialized to square root of a * a + b * b, during run time.
output:
$ javac dynamic_initialization.java
$ javadynamic_initialization
5.0

Q.12 Which of these can not be used for a variable name in Java?
A. identifier
B. keyword
C. both a < b
D. None of the mentioned

ANSWER : Option B keyword
SOLUTION :
Keywords are specially reserved words which can not be used for naming a user defined variable, example : class, int, for etc

---

Q.13 Which is the valid declarations within an interface definition?
A. public double methoda();
B. public final double methoda();
C. static void methoda(double d1);
D. protected void methoda(double d1);

ANSWER : Option A public double methoda();
SOLUTION :
A is correct. A public access modifier is acceptable. The method prototypes in an interface are all abstract by virtue of their declaration, and should not be declared abstract.
B is wrong. The final modifier means that this method cannot be constructed in a subclass. A final method cannot be abstract.
C is wrong. static is concerned with the class and not an instance.
D is wrong. protected is not permitted when declaring a method of an interface. See information below.
Member declarations in an interface disallow the use of some declaration modifiers; you cannot use transient, volatile, or synchronized in a member declaration in an interface. Also, you may not use the private and protected specifiers when declaring members of an interface.

Q.14 What is the numerical range of a char in Java?

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A. -128 to 127
B. 0 to 256
C. 0 to 32767
D. 0 to 65535

ANSWER : Option D 0 to 65535
SOLUTION :
Char occupies 16-bit in memory, so it supports 2^16 i:e from 0 to 65535.

Q.15 Which of these is data type long literal?
A. 0x99fffL
B. ABCDEFG
C. 0x99fffa
D. 99671246

ANSWER : Option A 0x99fffL
SOLUTION :
Data type long literals are appended by an upper or lowercase L. 0x99fffL is hexadecimal long literal.

Q.16 What is the range of data type byte in Java?
A. -128 to 127
B. -32768 to 32767
C. -2147483648 to 2147483647
D. None of the above

ANSWER : Option A -128 to 127
SOLUTION :
Byte occupies 8 bits in memory. Its range is from -128 to 127.

Q.17 What will be the output of the program?

```
public class TestDogs
{
public static void main(String [] args)
   {
      Dog [][] theDogs = new Dog[3][];
System.out.println(theDogs[2][0].toString());
   }
}
class Dog { }
```

A. null
B. theDogs
C. Compilation fails
D. An exception is thrown at runtime

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ANSWER : Option D An exception is thrown at runtime
SOLUTION :
The second dimension of the array referenced by theDogs has not been initialized. Attempting to access an uninitialized object element (System.out.println(theDogs[2][0].toString());) raises a NullPointerException.

Q.18 What is the range of data type short in Java?
A. -128 to 127
B. -32768 to 32767
C. -2147483648 to 2147483647
D. None of the mentioned

ANSWER : Option B -32768 to 32767
SOLUTION :
Short occupies 32 bits in memory. Its range is from -32768 to 32767.

Q.19 In the given program, how many lines of output will be produced?

```
public class Test
{
public static void main(String [] args)
   {
int [] [] [] x = new int [3] [] [];
int i, j;
x[0] = new int[4][];
x[1] = new int[2][];
x[2] = new int[5][];
for (i = 0; i <x.length; i++)
   {
for (j = 0; j < x[i].length; j++)
      {
x[i][j] = new int [i + j + 1];
System.out.println("size = " + x[i][j].length);
      }
   }
   }
}
```

A. 7
B. 9
C. 11
D. 13

ANSWER : Option C 11
SOLUTION :
The loops use the array sizes (length).

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It produces 11 lines of output as given below.
D:Java>javac Test.java
D:Java>java Test
size = 1
size = 2
size = 3
size = 4
size = 2
size = 3
size = 3
size = 4
size = 5
size = 6
size = 7
Therefore, 11 is the answer.

Q.20 What will be the output of the program ?

```
public class Test
{
public static void main(String [] args)
   {
signedint x = 10;
for (int y=0; y<5; y++, x--)
System.out.print(x + ", ");
   }
}
```

A. 10, 9, 8, 7, 6,
B. 9, 8, 7, 6, 5,
C. Compilation fails.
D. An exception is thrown at runtime.

ANSWER : Option C Compilation fails.
SOLUTION :
The word "signed" is not a valid modifier keyword in the Java language. All number primitives in Java are signed. Hence the Compilation will fails.

Q.21 What is the output of this program?

```
class main_arguments {
public static void main(String [] args)
      {
         String [][] argument = new String[2][2];
int x;
argument[0] = args;
         x = argument[0].length;
```

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```
for (int y = 0; y < x; y++)
System.out.print(" " + argument[0][y]);
      }
   }
```

A. 1 1
B. 1 0
C. 1 0 3
D. 1 2 3

ANSWER : Option D 1 2 3
SOLUTION :
In argument[0] = args;, the reference variable arg[0], which was referring to an array with two elements, is reassigned to an array (args) with three elements.
Output:
$ javac main_arguments.java
$ javamain_arguments
1 2 3

Q.22 Which of these literals can be contained in a data type float variable?
A. 1.7e-308
B. 3.4e-038
C. 1.7e+308
D. 3.4e-050

ANSWER : Option B 3.4e-038
SOLUTION :
Range of data type float is 3.4e-038 to 3.4e+308.

Q.23 Which of the following are legal lines of Java code?
1. int w = (int)888.8;
2. byte x = (byte)100L;
3. long y = (byte)100;
4. byte z = (byte)100L;

A. 1 and 2
B. 2 and 3
C. 3 and 4
D. All statements are correct.

ANSWER : Option D All statements are correct.
SOLUTION :
Statements (1), (2), (3), and (4) are correct. (1) is correct because when a floating-point number (a double in this case) is cast to an int, it simply loses the digits after the decimal.(2) and (4) are correct because a long can be cast into a byte. If the long is over 127, it loses its most significant (leftmost) bits.(3) actually works, even though a cast is not necessary,

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because a long can store a byte.

Q.24 What is the output of this program?

```
class evaluate {
public static void main(String args[])
        {
int a[] = {1,2,3,4,5};
 int d[] = a;
 int sum = 0;
 for (int j = 0; j < 3; ++j)
sum += (a[j] * d[j + 1]) + (a[j + 1] * d[j]);
 System.out.println(sum);
        }
    }
```

A. 38
B. 39
C. 40
D. 41

ANSWER : Option C 40
SOLUTION :
output:

```
$ javac evaluate.java
$ java evaluate
40
```

Q.25 What is the output of this program?

```
Class asciicodes {
public static void main(String args[])
        {
char var1 = 'A';
 char var2 = 'a';
 System.out.println((int)var1 + " " + (int)var2);
        }
    }
```

A. 162
B. 65 97
C. 67 95
D. 66 98

ANSWER : Option B 65 97
SOLUTION :
ASCII code for 'A' is 65 and for 'a' is 97.
output:

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$ javac asciicodes.java
$ javaasciicodes
65 97

Q.26 What is the output of this program?

```
class mainclass {
public static void main(String args[])
        {
boolean var1 = true;
 boolean var2 = false;
 if (var1)
 System.out.println(var1);
 else
 System.out.println(var2);
       }
   }
```

A. 0
B. 1
C. true
D. false

ANSWER : Option C true
SOLUTION :
output:
$ javac mainclass.java
$ javamainclass
true

Q.27 If an expression contains double, int, float, long, then whole expression will promoted into which of these data types?
A. long
B. int
C. double
D. float

ANSWER : Option C double
SOLUTION :
If any operand is double the result of expression is double.

Q.28 An expression involving byte, int, and literal numbers is promoted to which of these?
A. int
B. long
C. byte
D. float

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ANSWER : Option A int
SOLUTION :
An expression involving bytes, ints, shorts, literal numbers, the entire expression is promoted to int before any calculation is done.

Q.29 What is the output of this program?

```
class conversion {
public static void main(String args[])
        {
double a = 295.04;
int  b = 300;
byte c = (byte) a;
byte d = (byte) b;
System.out.println(c + " "  + d);
        }
   }
```

A. 38 43
B. 39 44
C. 295 300
D. 295.04 300

ANSWER : Option B 39 44
SOLUTION :
Type casting a larger variable into a smaller variable results in modulo of larger variable by range of smaller variable. b contains 300 which is larger than byte's range i:e -128 to 127 hence d contains 300 modulo 256 i:e 44.
output:
$ javac conversion.java
$ java conversion
39 44

Q.30 Which of these is returned by operators &, ?
A. Integer
B. Boolean
C. Character
D. Float

ANSWER : Option A Integer
SOLUTION :
Here & is a BITWISE AND it returns integer value.

Q.31 Which of these values can a boolean variable contain?
A. True & False

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B. 0 & 1
C. Any integer value.
D. Both a & b

ANSWER : Option A True & False
SOLUTION :
Boolean variable can contain only one of two possible values, true and false.

Q.32 What will be the output of the program?

```
public class CommandArgsThree
{
public static void main(String [] args)
   {
      String [][] argCopy = new String[2][2];
int x;
argCopy[0] = args;
      x = argCopy[0].length;
for (int y = 0; y < x; y++)
      {
System.out.print(" " + argCopy[0][y]);
      }
   }
}
```

and the command-line invocation is
>javaCommandArgsThree 1 2 3

A. 0 0
B. 1 2
C. 0 0 0
D. 1 2 3

ANSWER : Option D 1 2 3
SOLUTION :
In argCopy[0] = args;, the reference variable argCopy[0], which was referring to an array with two elements, is reassigned to an array (args) with three elements.

Q.33 What is the output of this program?

```
class conversion {
public static void main(String args[])
      {
double a = 295.04;
int  b = 300;
byte c = (byte) a;
byte d = (byte) b;
System.out.println(c + " "  + d);
      }
```

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```
   }
```

A. 38 43
B. 39 44
C. 295 300
D. 295.04 300

ANSWER : Option B 39 44
SOLUTION :
Type casting a larger variable into a smaller variable results in modulo of larger variable by range of smaller variable. b contains 300 which is larger than byte's range i:e -128 to 127 hence d contains 300 modulo 256 i:e 44.
output:
$ javac conversion.java
$ java conversion
39 44

Q.34 What is the output of this program?

```
class array_output {
public static void main(String args[])
       {
 int array_variable [] = new int[10];
 for (int i = 0; i < 10; ++i) {
array_variable[i] = i/2;
arry_variable[i]++;
System.out.print(array_variable[i] + " ");
i++;
          }
       }
   }
```

A. 0 2 4 6 8
B. 0 1 2 3 4
C. 0 1 2 3 4 5 6 7 8 9
D. 1 2 3 4 5 6 7 8 9 10

ANSWER : Option B 0 1 2 3 4
SOLUTION :
When an array is declared using new operator then all of its elements are initialized to 0 automatically. for loop body is executed 5 times as whenever controls comes in the loop i value is incremented twice, first by i++ in body of loop then by ++i in increment condition of for loop.
output:
$ javac array_output.java
$ javaarray_output
0 1 2 3 4

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Q.35 Which one is a valid declaration of a boolean?
A. boolean b1 = 1;
B. boolean b2 = false;
C. boolean b3 = false;
D. boolean b4 = true;

ANSWER : Option C boolean b3 = false;
SOLUTION :
Boolean can only be assigned true or false literals.

Q.36 What is the output of this program?

```
classarray_output {
public static void main(String args[])
       {
chararray_variable [] = new char[10];
 for (int i = 0; i < 10; ++i) {
array_variable[i] = "i";
System.out.print(array_variable[i] + "" );
i++;
          }
       }
   }
```

A. iiiii
B. 0 1 2 3 4
C. i j k l m
D. None of the mentioned

ANSWER : Option A iiiii
SOLUTION :
$ javac array_output.java
$ javaarray_output
iiiii

Q.37 public interface Foo
{
int k = 4; /* Line 3 */
}
Which three piece of codes are equivalent to line 3?
finalint k = 4;
publicint k = 4;
staticint k = 4;
abstractint k = 4;
volatileint k = 4;
protectedint k = 4;

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A. 1, 2 and 3
B. 2, 3 and 4
C. 3, 4 and 5
D. 4, 5 and 6

ANSWER : Option A 1, 2 and 3
SOLUTION :
(1), (2) and (3) are correct. Interfaces can have constants, which are always implicitly public, static, and final. Interface constant declarations of public, static, and final are al in any combination.

Q.38 What is the output of this program?

```
class booloperators {
public static void main(String args[])
        {
boolean var1 = true;
 boolean var2 = false;
 System.out.println((var2 & var2));
        }
    }
```

A. 0
B. 1
C. true
D. false

ANSWER : Option D false
SOLUTION :
boolean '&' operator always returns true or false. var1 is defined true and var2 is defined false hence their '&' operator result is false.
output:

```
$ javac booloperators.java
$ javabooloperators
False
```

Q.39 What is the output of this program?

```
class A {
final public int calculate(int a, int b) { return 1; }
    }
class B extends A {
publicint calculate(int a, int b) { return 2; }
    }
public class output {
public static void main(String args[])
        {
           B object = new B();
```

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```
System.out.print("b is " + b.calculate(0, 1));
        }
    }
```

A. b is : 2
B. b is : 1
C. Compilation Error.
D. An exception is thrown at runtime.

ANSWER : Option C Compilation Error.
SOLUTION :
The code does not compile because the method calculate() in class A is final and so cannot be overridden by method of class b.

Q.40 What is the output of this program?

```
class c {
public void main( String[] args )
        {
System.out.println( "Hello" + args[0] );
        }
    }
```

A. Hello c
B. Hello
C. Hello world
D. Runtime Error.

ANSWER : Option D Runtime Error.
SOLUTION :
A runtime error will occur owning to the main method of the code fragment not being declared static.
Output:
$ javac c.java
Exception in thread ~Ac^a'notA"main~Ac^a'not^A

Q.41 Which of these occupy first 0 to 127 in Unicode character set used for characters in Java?
A. ASCII
B. ISO-LATIN-1
C. None of the mentioned
D. Both a & b

ANSWER : Option D Both a & b
SOLUTION :
First 0 to 127 character set in Unicode are same as those of ISO-LAIN-1 and ASCII.

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Q.42 Which will legally declare, construct, and initialize an array?
A. int [] myList = {"1", "2", "3"};
B. int [] myList = (5, 8, 2);
C. intmyList [] [] = {4,9,7,0};
D. intmyList [] = {4, 3, 7};

ANSWER : Option D intmyList [] = {4, 3, 7};
SOLUTION :
The only legal array declaration and assignment statement is D
A is wrong because it initializes an int array with String literals.
B is wrong because it use something other than curly braces for the initialization.
C is wrong because it provides initial values for only one dimension, although the declared array is a two-dimensional array.

Q.43 What will be the output of the program?

```
public class X
{
public static void main(String [] args)
   {
      String names [] = new String[5];
for (int x=0; x <args.length; x++)
names[x] = args[x];
System.out.println(names[2]);
   }
}
```

and the command line invocation is

```
>java X a b
```

A. names
B. null
C. Compilation fails
D. An exception is thrown at runtime

ANSWER : Option B null
SOLUTION :
The names array is initialized with five null elements. Then elements 0 and 1 are assigned the String values "a" and "b" respectively (the command-line arguments passed to main). Elements of names array 2, 3, and 4 remain unassigned, so they have a value of null.

Q.44 What is the numerical range of a char?
A. -128 to 127
B. -(215) to (215) - 1
C. 0 to 32767
D. 0 to 65535

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ANSWER : Option D 0 to 65535
SOLUTION :
A char is really a 16-bit integer behind the scenes, so it supports 216 (from 0 to 65535) values.