Core Java MCQ

This Section of our 1000+ Java MCQs focuses on Integer and Floating Datatypes of Java Programming Language.

1. What is the range of short data type in Java?

a) -128 to 127

b) -32768 to 32767

c) -2147483648 to 2147483647

d) None of the mentioned

Answer: b

Explanation: Short occupies 16 bits in memory. Its range is from -32768 to 32767.

2. What is the range of byte data type in Java?

a) -128 to 127

b) -32768 to 32767

c) -2147483648 to 2147483647

d) None of the mentioned

Answer: a

Explanation: Byte occupies 8 bits in memory. Its range is from -128 to 127.

3. 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: d

Explanation: 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, because a long can store a byte.

4. An expression involving byte, int, and literal numbers is promoted to which of these?

a) int

b) long

c) byte

d) float

Answer: a

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

5. Which of these literals can be contained in float data type variable?

a) -1.7e+308

b) -3.4e+038

c) +1.7e+308

d) -3.4e+050

Answer: b

Explanation: Range of float data type is -(3.4e38) To +(3.4e38)

6. Which data type value is returned by all transcendental math functions?

a) int

b) float

c) double

d) long

Answer: c

7. What is the output of this program?

```
class average {
    public static void main(String args[])
    {
        double num[] = {5.5, 10.1, 11, 12.8, 56.9, 2.5};
        double result;
        result = 0;
        for (int i = 0; i < 6; ++i)
            result = result + num[i];
             System.out.print(result/6);
     }
}
```

a) 16.34

b) 16.566666644

c) 16.46666666666667

d) 16.46666666666666

Answer: c

output:

$ javac average.java

$ java average

16.46666666666667

8. What will be the output of these statements?

```
class output {
    public static void main(String args[])
    {
        double a, b,c;
        a = 3.0/0;
        b = 0/4.0;
        c=0/0.0;
        System.out.println(a);
        System.out.println(b);
```

```
        System.out.println(c);
    }
  }
```

a) Infinity

b) 0.0

c) NaN

d) all of the mentioned

Answer: d

Explanation: For floating point literals, we have constant value to represent (10/0.0) infinity either positive or negative and also have NaN (not a number for undefined like 0/0.0), but for the integral type, we don't have any constant that's why we get an arithmetic exception.

9. 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: c

Explanation: Operator ++ has more preference than *, thus g becomes 4 and when multiplied by 8 gives 32.

output:

$ javac increment.java

$ java increment

32

10. What is the output of this program?

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

a) 301.5656

b) 301

c) 301.56

d) 301.56560000

Answer: a

output:

$ javac area.java

$ java area

301.5656

Character and Boolean Data Type

11. What is the numerical range of a char data type in Java?

a) -128 to 127

b) 0 to 256

c) 0 to 32767

d) 0 to 65535

Answer: d

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

12. 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: c

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.

13. Which of these values can a boolean variable contain?

a) True & False

b) 0 & 1

c) Any integer value

d) true

Answer: a

Explanation: Boolean variable can contain only one of two possible values, true and false.

14. 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) ASCII and ISO-LATIN1

Answer: d

Explanation: First 0 to 127 character set in Unicode are same as those of ISO-LATIN-1 and ASCII.

15. 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: c

Explanation: Boolean can only be assigned true or false literals.

16. What is the output of this program?

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

a) i i i i i

b) 0 1 2 3 4

c) i j k l m

d) None of the mentioned

Answer: a

output:

$ javac array_output.java

$ java array_output

i i i i i

17. What is the output of this program?

```
class mainclass {
    public static void main(String args[])
    {
```

```
        char a = 'A';
        a++;
            System.out.print((int)a);
      }
   }
```

a) 66

b) 67

c) 65

d) 64

Answer: a

Explanation: ASCII value of ‘A’ is 65, on using ++ operator character value increments by one.

output:

$ javac mainclass.java

$ java mainclass

66

18. 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: c

Explanation: None.

output:

$ javac mainclass.java

$ java mainclass

true

19. 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: d

Explanation: 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

$ java booloperators

false

20. 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: b

Explanation: ASCII code for ‘A’ is 65 and for ‘a’ is 97.

output:

$ javac asciicodes.java

$ java asciicodes

65 97

Fundamentals of Java

A. Which method can be defined only once in a program?

main

protected

private

public

B. Which one of the following is a method having same name as that of it’s class?

main

Constructor

delete

new

C. _____ keyword is used to define a variable as a constant.

unsigned

Final

private

signed

D. _____ is the process of defining more than one method in a class differentiated by method signature.

method overloading

method overriding

method overwriting

method reloading

E. What is the extension of Java compiled classes?

.class

.exe

.obj

.dll

F. Which one of the following is invalid identifier with main method?

main

private

public

void

G. JVM stands for

Java Virtual Machine

Java Virtual Method

Java Void Machine

Just Virtual Machine

H. JRE ?

Java Runtime Environment

What is the default package in Java?

java.sql

java.lang

java.io

java.util

"-d" used in package compilation indicates _____.

root folder

same folder

nested folder

no folder

What is the default value of integer?

1

2

0

“_”

What is the return data type of main() method in Java?

int

void

char

float

Which constructor creates an empty string buffer with the specified capacity as length?

StringBuffer(str)

StringBuffer(int capacity)

StringBuffer(10)

StringBuffer("str")

Which is a mechanism where one object acquires all the properties and behaviours of the parent object?

Encapsulation

Polymorphism

Inheritance

none of the mentioned

_____ is the combination of inheritance and polymorphism.

method overriding

method overloading

method overwriting

method reloading

_____ is responsible to run java program.

Bytecode

JRE

Compiler

Interpreter

The output of the Java compiler is known as_____.

Unicode

ASCII Code

Bytecode

none of the mentioned

The _____ statement is used to include another Java package in a Java source file.

using

include

import

none of the mentioned

A subclass can call a constructor method defined by its super class by use of the _____ keyword.

implements

super

extends

import

Data Type: Big Decimal

21. Which of the following is the advantage of BigDecimal over double?

a) Syntax

b) Memory usage

c) Garbage creation

d) Precision

Answer: d

Explanation: BigDecimal has unnatural syntax, needs more memory and creates great amount of garbage. But it has high precision which is useful for some calculations like money.

22. Which of the below data type doesn't support overloaded methods for +,-,* and /?

a) int

b) float

c) double

d) BigDecimal

Answer: d

Explanation: int, float, double provide overloaded methods for +,-,* and /. BigDecimal does not provide these overloaded methods.

23. What is the output of below code snippet?

```
double a = 0.02;
double b = 0.03;
double c = b - a;
System.out.println(c);

BigDecimal _a = new BigDecimal("0.02");
BigDecimal _b = new BigDecimal("0.03");
BigDecimal _c = b.subtract(_a);
```

System.out.println(_c);

a) 0.009999999999999998

0.01

b) 0.01

0.009999999999999998

c) 0.01

0.01

d) 0.009999999999999998

0.009999999999999998

Answer: a

Explanation: BigDecimal provides more precision as compared to double. Double is faster in terms of performance as compared to BigDecimal.

24. What is the base of BigDecimal data type?

a) Base 2

b) Base 8

c) Base 10

d) Base e

Answer: c

Explanation: A BigDecimal is n*10^scale where n is an arbitrary large signed integer. Scale can be thought of as the number of digits to move the decimal point to left or right.

25. What is the limitation of toString() method of BigDecimal?

a) There is no limitation

b) toString returns null

c) toString returns the number in expanded form

d) toString uses scientific notation

Answer: d

Explanation: toString() of BigDecimal uses scientific notation to represent numbers known as canonical representation. We must use toPlainString() to avoid scientific notation.

26. Which of the following is not provided by BigDecimal?

a) scale manipulation

b) + operator

c) rounding

d) hashing

Answer: b

Explanation: toBigInteger() converts BigDecimal to a BigInteger.toBigIntegerExact() converts this BigDecimal to a BigInteger by checking for lost information.

27. BigDecimal is a part of which package?

a) java.lang

b) java.math

c) java.util

d) java.io

Answer: b

Explanation: BigDecimal is a part of java.math. This package provides various classes for storing numbers and mathematical operations.

28. What is BigDecimal.ONE?

a) wrong statement

b) custom defined statement

c) static variable with value 1 on scale 10

d) static variable with value 1 on scale 0

Answer: d

Explanation: BigDecimal.ONE is a static variable of BigDecimal class with value 1 on scale 0.

29. Which class is a library of functions to perform arithmetic operations of BigInteger and BigDecimal?

a) MathContext

b) MathLib

c) BigLib

d) BigContext

Answer: a

Explanation: MathContext class is a library of functions to perform arithmetic operations of BigInteger and BigDecimal.

30. What is the output of below code snippet?

```
public class AddDemo
{
        public static void main(String args[])
    {
                BigDecimal b = new BigDecimal("23.43");
                BigDecimal br = new BigDecimal("24");
                BigDecimal bres = b.add(new BigDecimal("450.23"));
                System.out.println("Add: "+bres);

                MathContext mc = new MathContext(2, RoundingMode.DOWN);
                BigDecimal bdecMath = b.add(new BigDecimal("450.23"), mc);
                System.out.println("Add using MathContext: "+bdecMath);
        }
}
```

a) Compilation failure

b) Add: 684.66

Add using MathContext: 6.8E+2

c) Runtime exception

d) Add 6.8E+2

Add using MathContext: 684.66

Answer: b

Explanation: add() adds the two numbers, MathContext provides library for carrying out various arithmetic operations.

Literals and Variables

31. Which of these is long data type literal?

a) 0x99fffL

b) ABCDEFG

c) 0x99fffa

d) 99671246

Answer: a

Explanation: Data type long literals are appended by an upper or lowercase L. 0x99fffL is hexadecimal long literal.

32. Which of these can be returned by the operator & ?

a) Integer

b) Boolean

c) Character

d) Integer or Boolean

Answer: d

Explanation: We can use binary ampersand operator on integers/chars (and it returns an integer) or on booleans (and it returns a boolean).

33. Literals in java must be appended by which of these?

a) L

b) l

c) D

d) L and I

Answer: d

Explanation: Data type long literals are appended by an upper or lowercase L.

34. Literal can be of which of these data types?

a) integer

b) float

c) boolean

d) all of the mentioned

Answer: d

Explanation: None

35. Which of these can not be used for a variable name in Java?

a) identifier

b) keyword

c) identifier & keyword

d) none of the mentioned

Answer: b

Explanation: Keywords are specially reserved words which can not be used for naming a user defined variable, example : class, int, for etc.

36. 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: c

Explanation: None

output:

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

37. 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;
        array_variable[i]++;
        System.out.print(array_variable[i] + " ");
        i++;
     }

   }
}
```

a) 0 2 4 6 8

b) 1 2 3 4 5

c) 0 1 2 3 4 5 6 7 8 9

d) 1 2 3 4 5 6 7 8 9 10

Answer: b

Explanation: 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
$ java array_output
```

1 2 3 4 5

38. 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: d

Explanation: 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

39. Which of these is incorrect string literal?

a) "Hello World"

b) "Hello\nWorld"

c) "\"Hello World\""

d) “Hello

world”

Answer: d

Explanation: all string literals must begin and end in same line.

40. What is the output of this program?

```
class dynamic_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);
   }
}
```

a) 5.0

b) 25.0

c) 7.0

d) Compilation Error

Answer: a

Explanation: Variable c has been dynamically initialized to square root of a * a + b * b, during run time.

output:

$ javac dynamic_initialization.java

$ java dynamic_initialization

5.0

Arrays

41. Which of these operators is used to allocate memory to array variable in Java?

a) malloc

b) alloc

c) new

d) new malloc

Answer: c

Explanation: Operator new allocates block of memory specified by the size of array, and gives the reference of memory allocated to the array variable.

42. Which of these is an incorrect array declaration?

a) int arr[] = new int[5]

b) int [] arr = new int[5]

c) int arr[] = new int[5]

d) int arr[] = int [5] new

Answer: d

Explanation: Operator new must be succeeded by array type and array size.

43. What will this code print?

```
int arr[] = new int [5];
System.out.print(arr);
```

a) 0

b) value stored in arr[0].

c) 00000

d) Class name@ hashcode in hexadecimal form

Answer: d

Explanation: If we trying to print any reference variable internally, toString() will be called which is implemented to return the String in following form:

classname@hashcode in hexadecimal form

44. Which of these is an incorrect Statement?

a) It is necessary to use new operator to initialize an array.

b) Array can be initialized using comma separated expressions surrounded by curly braces.

c) Array can be initialized when they are declared.

d) None of the mentioned

Answer: a

Explanation: Array can be initialized using both new and comma separated expressions surrounded by curly braces example : int arr[5] = new int[5]; and int arr[] = { 0, 1, 2, 3, 4};

45. Which of these is necessary to specify at time of array initialization?

a) Row

b) Column

c) Both Row and Column

d) None of the mentioned

Answer: a

Explanation: None.

46. 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;
         System.out.print(array_variable[i] + " ");
         i++;
      }
   }
}
```

a) 0 2 4 6 8

b) 1 3 5 7 9

c) 0 1 2 3 4 5 6 7 8 9

d) 1 2 3 4 5 6 7 8 9 10

Answer: a

Explanation: 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

$ java array_output

0 2 4 6 8

47. What is the output of this program?

```
class multidimention_array
{
   public static void main(String args[])
   {
      int arr[][] = new int[3][];
      arr[0] = new int[1];
      arr[1] = new int[2];
      arr[2] = new int[3];
          int sum = 0;
          for (int i = 0; i < 3; ++i)
              for (int j = 0; j < i + 1; ++j)
             arr[i][j] = j + 1;
          for (int i = 0; i < 3; ++i)
              for (int j = 0; j < i + 1; ++j)
             sum + = arr[i][j];
          System.out.print(sum);
   }
}
```

a) 11

b) 10

c) 13

d) 14

Answer: b

Explanation: arr[][] is a 2D array, array has been allotted memory in parts. 1st row contains 1 element, 2nd row contains 2 elements and 3rd row contains 3 elements. each element of array is given i + j value in loop. sum contains addition of all the elements of the array.

output:

$ javac multidimention_array.java

$ java multidimention_array

10

48. 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: d

Explanation: 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

49. Which of these is incorrect string literal?

a) "Hello World"

b) "Hello\nWorld"

c) "\"Hello World\""

d) "Hello

world"

Answer: d

Explanation: all string literals must begin and end in same line.

50. What is the output of this program?

```
class dynamic_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);
   }
}
```

a) 5.0

b) 25.0

c) 7.0

d) Compilation Error

Answer: a

Explanation: Variable c has been dynamically initialized to square root of a * a + b * b, during run time.

output:

$ javac dynamic_initialization.java

$ java dynamic_initialization

5.0

Arithmetic Operator

51. Which of the following can be operands of arithmetic operators?

a) Numeric

b) Boolean

c) Characters

d) Both Numeric & Characters

Answer:d

Explanation: The operand of arithmetic operators can be any of numeric or character type, But not boolean.

52. Modulus operator, %, can be applied to which of these?

a) Integers

b) Floating – point numbers

c) Both Integers and floating – point numbers.

d) None of the mentioned

Answer:c

Explanation: Modulus operator can be applied to both integers and floating point numbers. .

53. With x = 0, which of the following are legal lines of Java code for changing the value of x to 1?

1. x++;
2. x = x + 1;

3. x += 1;

4. x =+ 1;

a) 1, 2 & 3

b) 1 & 4

c) 1, 2, 3 & 4

d) 3 & 2

Answer: c

Explanation: Operator ++ increases value of variable by 1. x = x + 1 can also be written in shorthand form as x += 1. Also x =+ 1 will set the value of x to 1.

54. Decrement operator, −−, decreases value of variable by what number?

a) 1

b) 2

c) 3

d) 4

Answer: a

Explanation: None.

55. Which of these statements are incorrect?

a) Assignment operators are more efficiently implemented by Java run-time system than their equivalent long forms.

b) Assignment operators run faster than their equivalent long forms.

c) Assignment operators can be used only with numeric and character data type.

d) None

Answer: d

Explanation: None.

56. What is the output of this program?

```
class increment
{
   public static void main(String args[])
```

```
    {
       double var1 = 1 + 5;
       double var2 = var1 / 4;
       int var3 = 1 + 5;
       int var4 = var3 / 4;
       System.out.print(var2 + " " + var4);

    }
  }
```

a) 1 1

b) 0 1

c) 1.5 1

d) 1.5 1.0

Answer:c

output:

$ javac increment.java

$ java increment

1.5 1

57. What is the output of this program?

```
  class Modulus
  {
     public static void main(String args[])
     {
        double a = 25.64;
        int  b = 25;
        a = a % 10;
        b = b % 10;
        System.out.println(a + " "  + b);
     }
  }
```

a) 5.640000000000001 5

b) 5.640000000000001 5.0

c) 5 5

d) 5 5.640000000000001

Answer: a

Explanation: Modulus operator returns the remainder of a division operation on the operand. a = a % 10 returns 25.64 % 10 i:e 5.640000000000001. Similarly b = b % 10 returns 5.

output:

$ javac Modulus.java

$ java Modulus

5.640000000000001 5

58. 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:c

Explanation: Operator ++ has more preference than *, thus g becomes 4 and when multiplied by 8 gives 32.

output:

$ javac increment.java

$ java increment

32

59. Can 8 byte long data type be automatically type cast to 4 byte float data type?

a) True

b) False

Answer: a

Explanation: Both data types have different memory representation that's why 8-byte integral data type can be stored to 4-byte floating point data type.

60. What is the output of this program?

```
class Output
{
    public static void main(String args[])
    {
        int a = 1;
        int b = 2;
        int c;
        int d;
        c = ++b;
        d = a++;
        c++;
        b++;
        ++a;
        System.out.println(a + " " + b + " " + c);
    }
}
```

a) 3 2 4

b) 3 2 3

c) 2 3 4

d) 3 4 4

Answer: d

output:

$ javac Output.java

$ java Output

3 4 4

Relational Operator & Boolean Logic Operator

61. What is the output of relational operators?

a) Integer

b) Boolean

c) Characters

d) Double

Answer: b

62. Which of these is returned by “greater than”, “less than” and “equal to” operators?

a) Integers

b) Floating – point numbers

c) Boolean

d) None of the mentioned

Answer:c

Explanation: All relational operators return a boolean value ie. true and false.

63. Which of the following operators can operate on a boolean variable?

1. &&
2. ==
3. ?:
4. +=

a) 3 & 2

b) 1 & 4

c) 1, 2 & 4

d) 1, 2 & 3

Answer: d

Explanation: Operator Short circuit AND, &&, equal to, == , ternary if-then-else, ?:, are boolean logical operators. += is an arithmetic operator it can operate only on numeric values.

64. Which of these operators can skip evaluating right hand operand?

a) !

b) |

c) &

d) &&

Answer: d

Explanation: Operator short circuit and, &&, and short circuit or, ||, skip evaluating right hand operand when output can be determined by left operand alone.

65. Which of these statement is correct?

a) true and false are numeric values 1 and 0

b) true and false are numeric values 0 and 1

c) true is any non zero value and false is 0

d) true and false are non numeric values

Answer: d

Explanation: True and false are keywords, they are non numeric values which do no relate to zero or non zero numbers. true and false are boolean values.

66. What is the output of this program?

```
class Relational_operator
{
   public static void main(String args[])
   {
      int var1 = 5;
      int var2 = 6;
      System.out.print(var1 > var2);
   }
```

```
   }
```

a) 1

b) 0

c) true

d) false

Answer:d

Explanation: Operator > returns a boolean value. 5 is not greater than 6 therefore false is returned.

output:

$ javac Relational_operator.java

$ java Relational_operator

false

67. What is the output of this program?

```
   class bool_operator
   {
      public static void main(String args[])
      {
         boolean a = true;
         boolean b = !true;
         boolean c = a | b;
             boolean d = a & b;
         boolean e = d ? b : c;
         System.out.println(d + " " + e);
      }
   }
```

a) false false

b) true ture

c) true false

d) false true

Answer: d

Explanation: Operator | returns true if any one operand is true, thus 'c = true | false' is true. Operator & returns a true if both of the operand is true thus d is false. Ternary operator ?: assigns left of ':' if condition is true and right hand of ':' if condition is false. d is false thus e = d ? b : c , assigns c to e , e contains true.

output:

```
$ javac bool_operator.java
$ java bool_operator
false true
```

68. What is the output of this program?

```
class ternary_operator
{
    public static void main(String args[])
    {
        int x = 3;
        int y = ~ x;
        int z;
        z = x > y ? x : y;
        System.out.print(z);
    }
}
```

a) 0

b) 1

c) 3

d) -4

Answer:c

Explanation: None.

output:

```
$ javac ternary_operator.java
$ java ternary_operator
3
```

69. What is the output of this program?

```
class Output
{
   public static void main(String args[])
   {
      int x , y = 1;
      x = 10;
      if (x != 10 && x / 0 == 0)
         System.out.println(y);
      else
         System.out.println(++y);
   }
}
```

a) 1

b) 2

c) Runtime error owing to division by zero in if condition

d) Unpredictable behavior of program

Answer: b

Explanation: Operator short circuit and, &&, skips evaluating right hand operand if left hand operand is false thus division by zero in if condition does not give an error.

output:

```
$ javac Output.java
$ java Output
2
```

70. What is the output of this program?

```
class Output
{
   public static void main(String args[])
   {
```

```
        boolean a = true;
        boolean b = false;
        boolean c = a ^ b;
        System.out.println(!c);
    }
  }
```

a) 0

b) 1

c) false

d) true

Answer: c

output:

$ javac Output.java

$ java Output

false

Assignment Operators and Operator Precedence

71. Which of these have highest precedence?

a) ()

b) ++

c) *

d) >>

Answer: a

Explanation: Order of precedence is (highest to lowest) a -> b -> c -> d.

72. What should be expression1 evaluate to in using ternary operator as in this line?

expression1 ? expression2 : expression3

a) Integer

b) Floating – point numbers

c) Boolean

d) None of the mentioned

Answer:c

Explanation: The controlling condition of ternary operator must evaluate to boolean.

73. What is the value stored in x in following lines of code?

```
int x, y, z;
x = 0;
y = 1;
x = y = z = 8;
```

a) 0

b) 1

c) 9

d) 8

Answer: d

74. What is the order of precedence (highest to lowest) of following operators?

1. &
2. ^
3. ?:

a) 1 -> 2 -> 3

b) 2 -> 1 -> 3

c) 3 -> 2 -> 1

d) 2 -> 3 -> 1

Answer: a

75. Which of these statements are incorrect?

a) Equal to operator has least precedence

b) Brackets () have highest precedence

c) Division operator, /, has higher precedence than multiplication operator

d) Addition operator, +, and subtraction operator have equal precedence

Answer: c

Explanation: Division operator, /, has equal precedence as of multiplication operator. In expression involving multiplication and division evaluation of expression will begin from right side when no brackets are used.

76. What is the output of this program?

```
class operators
{
   public static void main(String args[])
   {
      int var1 = 5;
      int var2 = 6;
      int var3;
      var3 = ++ var2 * var1 / var2 + var2;
      System.out.print(var3);
   }
}
```

a) 10

b) 11

c) 12

d) 56

Answer: c

Explanation: Operator ++ has the highest precedence than / , * and +. var2 is incremented to 7 and then used in expression, var3 = 7 * 5 / 7 + 7, gives 12.

output:

```
$ javac operators.java
$ java operators
12
```

77. What is the output of this program?

```
class operators
{
```

```
    public static void main(String args[])
    {
        int x = 8;
        System.out.println(++x * 3 + " " + x);
    }
  }
```

a) 24 8

b) 24 9

c) 27 8

d) 27 9

Answer: d

Explanation: Operator ++ has higher precedence than multiplication operator, *, x is incremented to 9 than multiplied with 3 giving 27.

output:

$ javac operators.java

$ java operators

27 9

78. What is the output of this program?

```
class Output
{
    public static void main(String args[])
    {
        int x=y=z=20;

    }
}
```

a) compile and runs fine

b) 20

c) run time error

d) compile time error

Answer:d

79. Which of these lines of code will give better performance?

1. a | 4 + c >> b & 7;
2. (a | (((4 * c) >> b) & 7))

a) 1 will give better performance as it has no parentheses.

b) 2 will give better performance as it has parentheses.

c) Both 1 & 2 will give equal performance.

d) Dependent on the computer system.

Answer: c

Explanation: Parentheses do not degrade the performance of the program. Adding parentheses to reduce ambiguity does not negatively affect your system.

80. What is the output of this program?

```
class Output
{
      public static void main(String args[])
      {
          int a,b,c,d;
          a=b=c=d=20
         a+=b-=c*=d/=20
        System.out.println(a+" "+b+" "+c+" "+d);
       }
}
```

a) compile time error

b) runtime error

c) a=20 b=0 c=20 d=1

d) none of the mentioned

Answer: c

Explanation: Expression will evaluate from right to left.

output:

$ javac Output.java

$ java Output

20 0 20 1

Control Statement

81. Which of these selection statements test only for equality?

a) if

b) switch

c) if & switch

d) none of the mentioned

Answer: b

Explanation: Switch statements checks for equality between the controlling variable and its constant cases.

82. Which of these are selection statements in Java?

a) if()

b) for()

c) continue

d) break

Answer:a

Explanation: Continue and break are jump statements, and for is an looping statement.

83. Which of the following loops will execute the body of loop even when condition controlling the loop is initially false?

a) do-while

b) while

c) for

d) none of the mentioned

Answer: a

84. Which of these jump statements can skip processing remainder of code in its body for a particular iteration?

a) break

b) return

c) exit

d) continue

Answer: d

85. Which of these statement is incorrect?

a) switch statement is more efficient than a set of nested ifs

b) two case constants in the same switch can have identical values

c) switch statement can only test for equality, whereas if statement can evaluate any type of boolean expression

d) it is possible to create a nested switch statements

Answer: b

Explanation: No two case constants in the same switch can have identical values.

86. What is the output of this program?

```
class selection_statements
{
   public static void main(String args[])
   {
      int var1 = 5;
      int var2 = 6;
      if ((var2 = 1) == var1)
         System.out.print(var2);
      else
         System.out.print(++var2);
   }
}
```

a) 1

b) 2

c) 3

d) 4

Answer:b

Explanation: var2 is initialised to 1. The conditional statement returns false and the else part gets executed.

output:

```
$ javac selection_statements.java
$ java selection_statements
2
```

87. What is the output of this program?

```
class comma_operator
{
    public static void main(String args[])
    {
        int sum = 0;
        for (int i = 0, j = 0; i < 5 & j < 5; ++i, j = i + 1)
            sum += i;
             System.out.println(sum);
    }
}
```

a) 5

b) 6

c) 14

d) compilation error

Answer: b

Explanation: Using comma operator , we can include more than one statement in the initialization and iteration portion of the for loop. Therefore both ++i and j = i + 1 is executed i gets the value – 0,1,2,3,4 & j gets the values -0,1,2,3,4,5.

output:

```
$ javac comma_operator.java
$ java comma_operator
6
```

88. What is the output of this program?

```
class jump_statments
{
   public static void main(String args[])
   {
      int x = 2;
      int y = 0;
      for ( ; y < 10; ++y)
      {
         if (y % x == 0)
            continue;
         else if (y == 8)
            break;
         else
           System.out.print(y + " ");
      }
   }
}
```

a) 1 3 5 7

b) 2 4 6 8

c) 1 3 5 7 9

d) 1 2 3 4 5 6 7 8 9

Answer:c

Explanation: Whenever y is divisible by x remainder body of loop is skipped by continue statement, therefore if condition y == 8 is never true as when y is 8, remainder body of loop is skipped by continue statements of first if. Control comes to print statement only in cases when y is odd.

output:

```
$ javac jump_statments.java
$ java jump_statments
1 3 5 7 9
```

89. What is the output of this program?

```
class Output
{
      public static void main(String args[])
      {
        final int a=10,b=20;
       while(a<b)
        {

        System.out.println("Hello");
        }
        System.out.println("World");

      }
}
```

a) Hello

b) run time error

c) Hello world

d) compile time error

Answer: d

Explanation: Every final variable is compile time constant.

90. What is the output of this program?

```
  class Output
  {
     public static void main(String args[])
     {
        int a = 5;
        int b = 10;
        first:
```

```
        {
          second:
          {
            third:
            {
               if (a ==  b >> 1)
                  break second;
            }
            System.out.println(a);
          }
          System.out.println(b);
        }
      }
   }
```

a) 5 10

b) 10 5

c) 5

d) 10

Answer: d

Explanation: b >> 1 in if returns 5 which is equal to a i:e 5, therefore body of if is executed and block second is exited. Control goes to end of the block second executing the last print statement, printing 10.

output:

$ javac Output.java

$ java Output

10

Advanced Control Statement

91. What would be the output of the following codesnippet if variable a=10?

```
if(a<=0)
{
```

```
  if(a==0)
  {
    System.out.println("1 ");
  }
  else
  {
     System.out.println("2 ");
  }
}
System.out.println("3 ");
```

a) 1 2

b) 2 3

c) 1 3

d) 3

Answer: d

Explanation: Since the first if condition is not met, control would not go inside if statement and hence only statement after the entire if block will be executed.

92. The while loop repeats a set of code while the condition is not met?

a) True

b) False

Answer: b

Explanation: While loop repeats a set of code only until condition is met.

93. What is true about break?

a) Break stops the execution of entire program

b) Break halts the execution and forces the control out of the loop

c) Break forces the control out of the loop and starts the execution of next iteration.

d) Break halts the execution of the loop for certain time frame

Answer: b

Explanation: Break halts the execution and forces the control out of the loop.

94. What is true about do statement?

a) do statement executes the code of a loop at least once

b) do statement does not get execute if condition is not matched in the first iteration

c) do statement checks the condition at the beginning of the loop

d) do statement executes the code more than once always

Answer: a

Explanation: Do statement checks the condition at the end of the loop. Hence, code gets executed at least once.

95. Which of the following is used with switch statement?

a) Continue

b) Exit

c) break

d) do

Answer: c

Explanation: Break is used with switch statement to shift control out of switch.

96. What is the valid data type for variable “a” to print “Hello World”?

```
switch(a)
{
  System.out.println("Hello World");
}
```

a) int and float

b) byte and short

c) char and long

d) byte and char

Answer: d

Explanation: The switch condition would only meet if variable “a” is of type byte or char.

97. Which of the following is not a decision making statement?

a) if

b) if-else

c) switch

d) do-while

Answer: d

Explanation: do-while is an iteration statement. Others are decision making statements.

98. Which of the following is not a valid jump statement?

a) break

b) goto

c) continue

d) return

Answer: b

Explanation: break, continue and return transfer control to another part of the program and returns back to caller after execution. However, goto is marked as not used in Java.

99. From where break statement causes an exit?

a) Only from innermost loop

b) Terminates a program

c) Only from innermost switch

d) From innermost loops or switches

Answer: d

Explanation: The break statement causes an exit from innermost loop or switch.

100. Which of the following is not a valid flow control statement?

a) exit()

b) break

c) continue

d) return

Answer: a

Explanation: exit() is not a flow control statement in Java. exit() terminates the currently running JVM.

Abstract Class and Super class

101. Which of these keywords are used to define an abstract class?

a) abst

b) abstract

c) Abstract

d) abstract class

Answer: b

102. Which of these is not abstract?

a) Thread

b) AbstractList

c) List

d) None of the Mentioned

Answer: a

Explanation: Thread is not an abstract class.

103. If a class inheriting an abstract class does not define all of its function then it will be known as?

a) Abstract

b) A simple class

c) Static class

d) None of the mentioned

Answer: a

Explanation: Any subclass of an abstract class must either implement all of the abstract method in the superclass or be itself declared abstract.

104. Which of these is not a correct statement?

a) Every class containing abstract method must be declared abstract

b) Abstract class defines only the structure of the class not its implementation

c) Abstract class can be initiated by new operator

d) Abstract class can be inherited

Answer: c

Explanation: Abstract class cannot be directly initiated with new operator, Since abstract class does not contain any definition of implementation it is not possible to create an abstract object.

105. Which of these packages contains abstract keyword?

a) java.lang

b) java.util

c) java.io

d) java.system

Answer: a

106. What is the output of this program?

```
class A
{
   public int i;
   private int j;
}
class B extends A
{
   void display()
   {
      super.j = super.i + 1;
      System.out.println(super.i + " " + super.j);
   }
}
class inheritance
{
```

```
    public static void main(String args[])
    {
       B obj = new B();
       obj.i=1;
       obj.j=2;
       obj.display();
    }
  }
```

a) 2 2

b) 3 3

c) Runtime Error

d) Compilation Error

Answer: d

Explanation: Class contains a private member variable j, this cannot be inherited by subclass B and does not have access to it.

output:

```
$ javac inheritance.java
Exception in thread "main" java.lang.Error: Unresolved compilation problem:
        The field A.j is not visible
```

107. What is the output of this program?

```
  class A
  {
     public int i;
     public int j;
     A()
    {
        i = 1;
        j = 2;
         }
  }
```

```
class B extends A
{
   int a;
       B()
   {
      super();
   }
}
class super_use
{
   public static void main(String args[])
   {
      B obj = new B();
      System.out.println(obj.i + " " + obj.j)
   }
 }
```

a) 1 2

b) 2 1

c) Runtime Error

d) Compilation Error

Answer: a

Explanation: Keyword super is used to call constructor of class A by constructor of class B. Constructor of a initializes i & j to 1 & 2 respectively.

output:

$ javac super_use.java

$ java super_use

1 2

108. What is the output of this program?

```
abstract class A
{
```

```
    int i;
    abstract void display();
}
class B extends A
{
    int j;
    void display()
    {
        System.out.println(j);
    }
}
class Abstract_demo
{
    public static void main(String args[])
    {
        B obj = new B();
        obj.j=2;
        obj.display();
    }
}
```

a) 0

b) 2

c) Runtime Error

d) Compilation Error

Answer: b

Explanation: class A is an abstract class, it contains a abstract function display(), the full implementation of display() method is given in its subclass B, Both the display functions are the same. Prototype of display() is defined in class A and its implementation is given in class B.

output:

```
$ javac Abstract_demo.java
```

```
$ java Abstract_demo
2
```

109. What is the output of this program?

```
class A
  {
    int i;
    void display()
    {
      System.out.println(i);
    }
  }
  class B extends A
  {
    int j;
    void display()
    {
      System.out.println(j);
    }
  }
  class method_overriding
  {
    public static void main(String args[])
    {
      B obj = new B();
      obj.i=1;
      obj.j=2;
      obj.display();
    }
  }
```

a) 0

b) 1

c) 2

d) Compilation Error

Answer: c

Explanation: class A & class B both contain display() method, class B inherits class A, when display() method is called by object of class B, display() method of class B is executed rather than that of Class A.

output:

$ javac method_overriding.java

$ java method_overriding

2

110. What is the output of this program?

```
class A
{
   public int i;
   protected int j;
}
class B extends A
{
   int j;
   void display()
   {
      super.j = 3;
      System.out.println(i + " " + j);
   }
}
class Output
{
   public static void main(String args[])
   {
```

```
        B obj = new B();
        obj.i=1;
        obj.j=2;
        obj.display();
    }
  }
```

a) 1 2

b) 2 1

c) 1 3

d) 3 1

Answer: a

Explanation: Both class A & B have member with same name that is j, member of class B will be called by default if no specifier is used. I contains 1 & j contains 2, printing 1 2.

output:

$ javac Output.java

$ java Output

1 2

OOPS Concept

111. Which of the following is not OOPS concept in Java?

a) Inheritance

b) Encapsulation

c) Polymorphism

d) Compilation

Answer: d

Explanation: There are 4 OOPS concepts in Java. Inheritance, Encapsulation, Polymorphism and Abstraction.

112. Which of the following is a type of polymorphism in Java?

a) Compile time polymorphism

b) Execution time polymorphism

c) Multiple polymorphism

d) Multilevel polymorphism

Answer: a

Explanation: There are two type of polymorphism in Java. Compile time polymorphism (overloading) and runtime polymorphism (overriding).

113. When does method overloading is determined?

a) At run time

b) At compile time

c) At coding time

d) At execution time

Answer: b

Explanation: Overloading is determined at compile time. Hence, it is also known as compile time polymorphism.

114. When Overloading does not occur?

a) More than one method with same name but different method signature and different number or type of parameters

b) More than one method with same name, same signature but different number of signature

c) More than one method with same name, same signature, same number of parameters but different type

d) More than one method with same name, same number of parameters and type but different signature

Answer: d

Explanation: Overloading occurs when more than one method with same name but different constructor and also when same signature but different number of parameters and/or parameter type.

115. Which concept of Java is a way of converting real world objects in terms of class?

a) Polymorphism

b) Encapsulation

c) Abstraction

d) Inheritance

Answer: c

Explanation: Abstraction is concept of defining real world objects in terms of classes or interfaces.

116. Which concept of Java is achieved by combining methods and attribute into a class?

a) Encapsulation

b) Inheritance

c) Polymorphism

d) Abstraction

Answer: a

Explanation: Encapsulation is implemented by combining methods and attribute into a class. The class acts like a container of encapsulating properties.

117. What is it called if an object has its own lifecycle and there is no owner?

a) Aggregation

b) Composition

c) Encapsulation

d) Association

Answer: d

Explanation: It is a relationship where all objects have their own lifecycle and there is no owner. This occurs where many to many relationship is available, instead of one to one or one to many.

118. What is it called where child object gets killed if parent object is killed?

a) Aggregation

b) Composition

c) Encapsulation

d) Association

Answer: b

Explanation: Composition occurs when child object gets killed if parent object gets killed. Aggregation is also known as strong Aggregation.

119. What is it called where object has its own lifecycle and child object cannot belong to another parent object?

a) Aggregation

b) Composition

c) Encapsulation

d) Association

Answer: a

Explanation: Aggregation occurs when objects have their own life cycle and child object can associate with only one parent object.

120. Method overriding is combination of inheritance and polymorphism?

a) True

b) false

Answer: a

Explanation: In order for method overriding, method with same signature in both superclass and subclass is required with same signature. That satisfies both concepts inheritance and polymorphism.

JDK JIT JVM JRE

121. Which component is used to compile, debug and execute java program?

a) JVM

b) JDK

c) JIT

d) JRE

Answer: b

Explanation: JDK is core component of Java Environment and provides all the tools, executables and binaries required to compile, debug and execute a Java Program.

122. Which component is responsible for converting bytecode into machine specific code?

a) JVM

b) JDK

c) JIT

d) JRE

Answer: a

Explanation: JVM is responsible to converting bytecode to the machine specific code. JVM is also platform dependent and provides core java functions like garbage collection,memory management, security etc.

123. Which component is responsible to run java program?

a) JVM

b) JDK

c) JIT

d) JRE

Answer: d

Explanation: JRE is the implementation of JVM, it provides platform to execute java programs.

124. Which component is responsible to optimize bytecode to machine code?

a) JVM

b) JDK

c) JIT

d) JRE

Answer: c

Explanation: JIT optimizes bytecode to machine specific language code by compiling similar bytecodes at same time.This reduces overall time taken for compilation of bytecode to machine specific language.

125. Which statement is true about java?

a) Platform independent programming language

b) Platform dependent programming language

c) Code dependent programming language

d) Sequence dependent programming language

Answer: a

Explanation: Java is called ‘Platform Independent Language’ as it primarily works on the principle of ‘compile once, run everywhere’.

126. Which of the below is invalid identifier with main method?

a) public

b) static

c) private

d) final

Answer: c

Explanation: main method cannot be private as it is invoked by external method. Other identifier are valid with main method.

127. What is the extension of java code files?

a) .class

b) .java

c) .txt

d) .js

Answer: b

Explanation: Java files have .java extension.

128. What is the extension of compiled java classes?

a) .class

b) .java

c) .txt

d) .js

Answer: a

Explanation: The compiled java files have .class extension.

129. How can we identify whether a compilation unit is class or interface from a .class file?

a) Java source file header

b) Extension of compilation unit

c) We cannot differentiate between class and interface

d) The class or interface name should be postfixed with unit type

Answer: a

Explanation: The Java source file contains a header that declares the type of class or interface, its visibility with respect to other classes, its name and any superclass it may extend, or interface it implements.

130. What is use of interpreter?

a) They convert bytecode to machine language code

b) They read high level code and execute them

c) They are intermediated between JIT and JVM

d) It is a synonym for JIT

Answer: b

Explanation: Interpreters read high level language (interprets it) and execute the program. Interpreters are normally not passing through byte-code and jit compilation.

Introduction to Methods

131. What is the return type of a method that does not returns any value?

a) int

b) float

c) void

d) double

Answer: c

Explanation: Return type of an method must be made void if it is not returning any value.

132. What is the process of defining more than one method in a class differentiated by method signature?

a) Function overriding

b) Function overloading

c) Function doubling

d) None of the mentioned

Answer: b

Explanation: Function overloading is a process of defining more than one method in a class with same name differentiated by function signature i:e return type or parameters type and number. Example – int volume(int length, int width) & int volume(int length , int width , int height) can be used to calculate volume.

133. Which of the following is a method having same name as that of it's class?

a) finalize

b) delete

c) class

d) constructor

Answer: d

Explanation: A constructor is a method that initializes an object immediately upon creation. It has the same name as that of class in which it resides.

134. Which method can be defined only once in a program?

a) main method

b) finalize method

c) static method

d) private method

Answer: a

Explanation: main() method can be defined only once in a program. Program execution begins from the main() method by java runtime system.

135. Which of these statement is incorrect?

a) All object of a class are allotted memory for the all the variables defined in the class

b) If a function is defined public it can be accessed by object of other class by inheritation

c) main() method must be made public

d) All object of a class are allotted memory for the methods defined in the class

Answer: d

Explanation: All object of class share a single copy of methods defined in a class, Methods are allotted memory only once. All the objects of the class have access to methods of that class are allotted memory only for the variables not for the methods.

136. What is the output of this program?

```
class box
{
   int width;
   int height;
   int length;
   int volume;
   void volume(int height, int length, int width)
   {
       volume = width*height*length;
   }
}
class Prameterized_method
{
   public static void main(String args[])
   {
      box obj = new box();
      obj.height = 1;
      obj.length = 5;
      obj.width = 5;
      obj.volume(3,2,1);
      System.out.println(obj.volume);
   }
```

```
    }
```

a) 0

b) 1

c) 6

d) 25

Answer: c

output:

$ Prameterized_method.java

$ Prameterized_method

6

137. What is the output of this program?

```
class equality
{
    int x;
    int y;
    boolean isequal()
    {
        return(x == y);
    }
}
class Output
{
    public static void main(String args[])
    {
        equality obj = new equality();
        obj.x = 5;
        obj.y = 5;
        System.out.println(obj.isequal());
    }
}
```

a) false

b) true

c) 0

d) 1

Answer: b

output:

$ javac Output.java

$ java Output

true

138. What is the output of this program?

```
class box
{
   int width;
   int height;
   int length;
   int volume;
   void volume()
   {
       volume = width*height*length;
   }
}
class Output
{
   public static void main(String args[])
   {
      box obj = new box();
      obj.height = 1;
      obj.length = 5;
      obj.width = 5;
      obj.volume();
```

```
        System.out.println(obj.volume);
    }
  }
```

a) 0

b) 1

c) 25

d) 26

Answer:c

output:

```
$ javac Output.java
$ java Output
25
```

139. In the below code, which call to sum() method is appropriate?

```
class Output
{
    public static int sum(int ...x)
    {
        return;
    }
    static void main(String args[])
    {
        sum(10);
        sum(10,20);
        sum(10,20,30);
        sum(10,20,30,40);
    }
}
```

a) only sum(10)

b) only sum(10,20)

c) only sum(10) & sum(10,20)

d) all of the mentioned

Answer: d

Explanation: sum is a variable argument method and hence it can take any number as argument.

140. What is the output of this program?

```
class area
{
   int width;
   int length;
   int volume;
   area()
   {
     width=5;
     length=6;
   }
   void volume()
   {
      volume = width*length*height;
   }
}
class cons_method
{
   public static void main(String args[])
   {
      area obj = new area();
      obj.volume();
      System.out.println(obj.volume);
   }
}
```

a) 0

b) 1

c) 30

d) error

Answer: d

Explanation: Variable height is not defined.

output:

$ javac cons_method.java

$ java cons_method

error: cannot find symbol height

Multithreading

1. What is multithreaded programming?
a) It's a process in which two different processes run simultaneously
b) It's a process in which two or more parts of same process run simultaneously
c) It's a process in which many different process are able to access same information
d) It's a process in which a single process can access information from many sources
View Answer

Answer: b
Explanation: Multithreaded programming a process in which two or more parts of the same process run simultaneously.
2. Which of these are types of multitasking?
a) Process based
b) Thread based
c) Process and Thread based
d) None of the mentioned
View Answer

Answer: c
Explanation: There are two types of multitasking: Process based multitasking and Thread based multitasking.
3. Thread priority in Java is?
a) Integer
b) Float
c) double
d) long
View Answer

Answer: a
Explanation: Java assigns to each thread a priority that determines hoe that thread should be treated with respect to others. Thread priority is integers that specify relative priority of one thread to another.

4. What will happen if two thread of the same priority are called to be processed simultaneously?

a) Anyone will be executed first lexographically

b) Both of them will be executed simultaneously

c) None of them will be executed

d) It is dependent on the operating system

View Answer

Answer: d
Explanation: In cases where two or more thread with same priority are competing for CPU cycles, different operating system handle this situation differently. Some execute them in time sliced manner some depending on the thread they call.

5. Which of these statements is incorrect?

a) By multithreading CPU idle time is minimized, and we can take maximum use of it

b) By multitasking CPU idle time is minimized, and we can take maximum use of it

c) Two thread in Java can have the same priority

d) A thread can exist only in two states, running and blocked

View Answer

Answer: d
Explanation: Thread exist in several states, a thread can be running, suspended, blocked, terminated & ready to run.

6. What is the output of this program?

```
1.  class multithreaded_programing
2.  {
3.     public static void main(String args[])
4.     {
5.        Thread t = Thread.currentThread();
6.        System.out.println(t);
7.     }
8.  }
```

a) Thread[5,main].

b) Thread[main,5].

c) Thread[main,0].

d) Thread[main,5,main].

View Answer

Answer: d
Explanation: None.
Output:

```
$ javac multithreaded_programing.java
$ java multithreaded_programing
Thread[main,5,main]
```

7. What is the priority of the thread in output of this program?

```
1.  class multithreaded_programing
2.  {
3.     public static void main(String args[])
4.     {
5.        Thread t = Thread.currentThread();
6.        System.out.println(t);
7.     }
8.  }
```

a) 4
b) 5
c) 0
d) 1

View Answer

Answer: b
Explanation: The output of program is Thread[main,5,main], in this priority assigned to the thread is 5. It's the default value. Since we have not named the thread they are named by the group to they belong i:e main method.
Output:

```
$ javac multithreaded_programing.java
$ java multithreaded_programing
Thread[main,5,main]
```

8. What is the name of the thread in output of this program?

```
1.  class multithreaded_programing
2.  {
3.     public static void main(String args[])
4.     {
5.        Thread t = Thread.currentThread();
6.        System.out.println(t);
7.     }
8.  }
```

a) main
b) Thread

c) System
d) None of the mentioned
View Answer

Answer: a
Explanation: The output of program is Thread[main,5,main], Since we have not explicitly named the thread they are named by the group to they belong i:e main method. Hence they are named ‘main’.
Output:

```
$ javac multithreaded_programing.java
$ java multithreaded_programing
Thread[main,5,main]
```