```
//main                                  //2                                  This set includes string methods/obj ref
Scanner console = new Scanner(System.in);  //3
int number = console.nextInt(); //4
if (number < 5) //5
System.out.print("I will go");  // 6
else if (number <  10)  //7
        System.out.print("you won't " " go");  //8
else    //9
        System.out.print("no you won't");  //10
```

1. What is wrong with the Line #8
   a. no quotes
   b. no semicolons
   c. no default
   d. no operator

2. What will happen when user types in **10**, if the mistake in line 8 is fixed.
   a. "no you won't" is printed
   b. error
   c. "no you won't go no you won't" is printed

```
//main                                          //2
Scanner console = new Scanner(System.in);   //3
int number = console.nextInt();                 //4
if (number > 4)           //5
System.out.print("I will Go");       //6
else if( number > 8)  //7
            System.out.print("yes, you'll"+ "go"); //8
else   //9
            System.out.print("no you won't"); //10
```

3. What will the output be when user types 2?
   I. no you won't
   II. I will Go
   III. yes, you'll go

   A. I
   B. II
   C. I and III
   D. II and III

4.
```
int pile = 0;
  int pile2 = 0;
  int pile3 = 0;
            while( pile <= 10 && pile2 <= 10 && pile3 <= 10)
            {
                        pile += 2;
                        pile2 += 3;
                        pile3 += 4;
                        System.out.println("pile1=" +pile+"Pile2="+pile2+"pile3"+pile3);
                        if(pile == 8)
                        {
                                    System.out.println("teehee");
                        }
            }
```

   The program will stop running when:
   A. pile = 8; B. pile2 = 2 C. pile3 = 12 D. pile4 = 10

5. Please rewrite this for loop as a while loop (assume all variables are initialized)

```
for (int x = 0 ; x <= 8; x += 2)
{
        System.out.println(x);
}
```

a. while(x = 0)
{
System.out.println(x);
x+2;
}
	b. while(x < 8)
	{ System.out.println(x);
	x+=2;
	}
		c. while(x <= 8)
		{
		System.out.println(x);
		x+=2;
		}

d. none of the above		

6. int x = Math.pow(y,2);

What is the name of the method and class?

a. Math is the method, and pow is the class
b. Math is the class, and pow is the method
c. Math and pow are both methods

7.
```
public static void main(String [] args)
{
        input();
}
public static void input()
{
        int a;
        for(a = 0; a < 5; a++)
        {
                int b = a*2;
                System.out.print(b+" ");
        }
}
```

What is the output?

a. 0 2 4 6 8 b. 2 4 6 8 10 c. 0 2 4 6

8.
```
public static void main(String [] args)
{
    Scanner input= new Scanner(System.in);
    System.out.println("Enter a number");
    int x = input.nextInt();
    System.out.println("Enter another number");
    int y = input.nextInt();
    //call method number
}
public static void number (int a, int b)
{
   int c = Math.max(a, b);
   System.out.println("The max is " +c);
   int d = Math.min(a, b);
   System.out.println("The min is " +d);
}
```

How do you call the number method in main?

a. number(a, b); b. number(x, y); c. number();

9. public static void money(int b)

What is the return type, name, and parameter type of this method?

a. int, money, int b. double, money, int c. void, money, int

10a. How would you correctly format the output?

```
String word;
word = "Hi";
|"Hi ______ my name is"|
^ left margin                ^ right margin
```

a. System.out.println(Format.left(word, 5) + "my name is");
b. System.out.println(Format.right(word, 5) + "my name is");
c. System.out.println(Format.center(word, 5) + "my name is");

10b. How would you correctly format the output?

```
String word;
word = "Hi";
|"Hi ______ my name is"|
^ left margin                ^ right margin
```

a. System.out.printf("%5s my name is", word);
b. System.out.printf("%-5s my name is", word);

Provide the output and data type of the following expressions:

11. (int)(89.45/8.32 + 2.3 * 6.7) + 5

a. 31, int b. 15, float c. 22, float d. 92, int e. NOT

12. (int)(45.35)/16 + 23 – (double)(18%7)

a. 21, int b. 21.0, double c. 22.0, int d. 21, double e. NOT

13. 23.5 + 34.2/4.1 * 3.1/2.1 + 1.1

a. 21.9, double
b. 36.9, float
c. 48.1, double
d. 3.3, float
e. NOT

14. What would be the output of the loop below?

```
int number = 1;
while(number <= 10)
{
    System.out.println(number);
    number++;
}
```

a. all rational numbers between 1 and 10
b. all integers from 1 to 10
c. all negative numbers from –1 to –10
d. all multiples of 2 between 1 and 10 inclusive

15. Variables will usually need to be ____ before they are used in a loop.

a. declared b. parsed/casted c. initialized d. converted

16. An if…else statement would be generally categorized under what?

a. methods b. sequences c. selection d. repetition

17. Which of the following is correctly listed in order from least to greatest in size?

a. int, char, boolean, float, double
b. boolean, int, char, float, double
c. boolean, char, int, float, double
d. boolean, char, int, double, float

18. Which is the correct form of casting to obtain a numeric value of 10?

a. int 8.56 + 2 b. (int) (8.56 + 2) c. int(8.56 + 2) d. (int)(8.56) + 2

19. All are logical operators except

a. && b. != c. || d. !

20. In this line: if(a < 0) { , the bracket is

a. never needed
b. always optional
c. necessary only of there is more then one statement
d. always necessary

21. What is the value of this expression? 10%4*(2 – 4/2) + 10

a. 10 b. 0 c. –10 d. 2 e. NOT

22. int x = 3; float y = 2.67; double z = x*y;
What is the value of z?

a. 8 b. 8.0 c. 8.01 d. 8.00 e. NOT

23. Which of the following is false?

a. 3 – 4 < 0
b. (float)(26 + (int)(44)/11) <= 40.0
c. (15%2 == 7)
d. 5+2*3 == 11

24. x = 3;

```
while(x > 0 && x <= 5)
{       arbitrary statements(s)
        x++;
}
```

How many times will the loop cycle before ending?

a. 5 b. 1 c. 2 d. 3 e. NOT

25. Which one of these words is NOT a Java Keyword?

a. short b. static c. computer d. byte

26. What is the correct code for getting input from the user?

a. in.nextln() b. in.nextline() c. in.nextInput() d. in.nextLine()

27. An identifier is a name assigned to a

a. variable, function, or class
b. integer, function, or class
c. integer, variable, or class
d. variable, Boolean, or float

28. Character data types can store

a. a letter b. a number c. a symbol d. all of the above

29. Can two if-else statements be used inside of each other?

a. yes b. no

30. The Boolean expression must be enclosed in (the condition for a loop)

a. () b. {} c. " " d. it does not need to be enclosed

31. Declare clickedYet as a boolean variable and initialize it with the value of false by:

a. private boolean clickedYet = false;
b. private boolean clickedYet == false;
c. private clickedYet = false;
d. private clickedYet == false;

32. Where in the structure of a while or for loop is the condition tested?
a. at the beginning of the loop
b. at the end of the loop
c. after the loop has begun
d. during the loop

33. In what 2 forms do programs exist in JAVA
a. source code and object code
b. direct code and source code
c. object code and class code
d. direct code and object code

34. Which of the following is not a valid identifier in JAVA
a. static b. I_Love_Pigs c. computer12 d. ChOCoLate

35. In a for loop, the three parameters are (in order):
a. Condition, incrementation, statement
b. Condition, equation, declaration
c. declaration, condition, incrementation
d. initialization, condition, incrementation

36. Which of the following is true?
a. 5%3 > 5-4/3
b. (7/3 == -2) || (15%2 == 7)
c. (4 != 4) && (2 < 4)
d. 5 –61 % (int)(148.9/44) == 1.4
e. NOT

37.
```
public static void main(String [] args)
{       rec(5);
}
public static void rec(int a)
{       if (a < 10)
        {
                a+=rec( (a+1) );
        }
        else
                return 10;
}
```
How many times does this code use rec()?
a. 7 b. 4 c. 5 d. 6

38. Write a program that uses recursion to start at one and add one if it's an odd number, and three if it is even, until the number reaches twenty.

a.
```
static int x=1;
public static void blah()
{
        if( (x%2) > 0 && x < 20)
        {       x += 3;
                blah();
        }
        else if ( (x%2) == 0 && x < 20)
        {       x+=1;
                blah();
        }
        else
                System.out.println(x);
}
```

b.
```
public static void blah()
{
        int x=1;
        if( (x%2) > 0  && x < 20)
        {       x+=3;
                blah();
        }
        else if ( (x%2) == 0 && x < 20)
        {       x+=1;
                blah();
        }
        else
                System.out.println(x);
}
```

c.
```
static int x=1;
public static void blah()
{
        if ( (x%2) > 0 && x < 20)
        {       x+=1;
                blah();
        }
        else if ( (x%2) == 0 && x < 20)
        {       x+=3;
                blah();
        }
        else
                System.out.println(x);
}
```

39. Which program portion accomplishes the task of printing out all multiples of five between 1 and 100? (pay attention to syntax)

a.
```
for (int number=0; number = 1-100; number++);
{ if (number % 5 == 0)
        System.out.println("number");
}
```

b.
```
for (int number = 0; number = 100; number++)
{ if (number / 5 = = 5)
        System.out.println(number);
}
```

c.
```
for (int number = 0; number <= 100; number++);
{       System.outprint(number);
}
```

d.
```
for (int number = 1; number <= 100; number++)
{ if (number % 5 == 0)
        System.out.print( number );
}
```

40. Which program would print "Happy New Year"?

a.
```
class Numbers
{
        int number = 0;
        if(number < 25)
        System.out,println("Merry Christmas");
        else
        System.out.println("Happy New Year");
        number++;
}
```

b.
```
class Numbers
{
        int number = 25;
        if (number > 25)
        System.out.println("Happy New Year");
        else
        System.out.println("Merry Christmas");
 }
```

c.
```
class Numbers
{
        int number=0;
        if(number > 0)
        System.out.println("Happy New Year");
        else
        System.out.println("Merry Christmas");
        number++;
}
```

d.
```
class Numbers
{
        int number = 0;
        if (number < 0)
        System.out.println("Merry Christmas");
        else
        System.out.println("Happy New Year");
}
```

41.
```
while ( x < 2 )                          //assume x = 0, counter = 0
{       y = 0;
        while (counter < 4)
        {       System.out.print(y + 2 + " ");
                y = y + 2;
                counter++;
        }
        x++;
}
```
What will the method above print out?

A. 2 4 6 8 / 2 4 6 8 B. 2 4 6 8 C. 0 2 4 6 D. NOT

42. Which program portion(s) will output the following. Assume r and s are initialized as zero.

```
***
***
```

A.
```
while (r < 3)
{
        while(s < 3)
        {
                System.out.print("*");
                s++;
                }
        r++;
        }
```

B.
```
while(r < 2)
{
        while(s < 3)
        {
        System.out.println("*");
                s++;
                }
        }
```

C.
```
while(r<2)
{
        while(s < 3)
        {
                System.out.print("*");
                s++;
        }
        r++;
}
```

D. None of these

43. How many times will this loop run?
```
int count = 1;
        do
        {
                count++;
        }while(count <= 7);
```
a. 6 times b. 8 times c. 7 times d. 9 times e. once

44. Read the following program and answer the question.
```
class Hello
{       public static void main(String []args)
        {
                int good = 4;
                int Good = 8;
                System.out.println("" + Good);
        }
}
```
What is the output of the program?

a. won't print anything b. 4 c. 8 d. 12 e. NOT

45. True (a) / False (b)
```
n == (double) 16%3          // n =5.1
```

46. Choose the true statement. (about size)

a. long > short > int > byte
b. int byte > short > long
c. long > int > short > byte
d. int > long > short > byte

Figure C.3:

```
int x = 0;
if(x > 0) {
System.out.print("HI "); }
else{
System.out.print("Aloha "); }
if(x == 2) {
System.out.print("Bonjour ");}
else{
x++; }
if(x == 1) {
System.out.print("Hello "); }
else{
System.out.print("Hi "); }
```

Figure D.4:

```
int x = 8;
if(x > 9) {
System.out.print("X-mas"); }
        else if ( x < 1 || x == 3) {
System.out.print("Merry"); }
else if ( x > 5) {
System.out.print("ChrIsTmAs"); }
        else{
System.out.print(" & Happy New Year");
}
```

Be careful of the formatting!

47. In figure C.3 (above left) what is printed?

a) HI Bonjour hi Hello b) Hi Bonjour Hello
c) Aloha Hello Hi d) Aloha Hello e) NOT

48. In figure D.4 (above right) what is printed ?

a) & Happy New Year b) CHrIsTmAs & Happy New Year
c) Merry d) ChrIsTmAs e) NOT

49. Read the following program and answer the questions:

```
public class Paycheck
{       public static void main(String [] args)
        {       int hours;
                double hourlywage;
                Scanner console =new Scanner(System.in);
                double subtotal;

                System.out.print( "\nEnter hours worked this week");
                hours =console.nextInt();
                System.out.print("\n Enter your hourly wage");
                hourlywage=console.nextDouble();

                System.out.println("Here is your paycheck:");
                subtotal = hours* hourlywage;
                System.out.printf("HOur    :%-20s\n", hours );
                System.out.println("Rate    :$%-20.2f\n", hourlywage );
                System.out.println("Subtotal :$%-20.2f\n", subtotal );
        }
}
```

If the user enters 40 for hours worked this week , and 7.5 as an hourly wage what is the output for "Subtotal" ?

a. $300 b. $300.00 c. $280 d. $280.00 e. NOT

50.
```
if ( expression1)
    { if(expression2)
            statement1;
    else
            statement2;}
    else
            statement3;
```

What is one possible outcome for the program portion above? (Formatting has been purposely omitted, so as not to provide hints.)

a.

expression1	expression2	statement executed
true	true	statement1
true	false	statement2
false	true	statement3
false	false	statement3

b.

expresion1	expression2	statement executed
true	true	statement1
true	false	statement2
true	true	statement3
false	false	statement3

c.

expression1	expression2	statement executed
true	true	statement1
true	true	statement1
true	true	statement3
false	true	statement3

d.

expression1	expression2	statement executed
true	true	statement2
false	false	statement2
false	true	statement2
false	true	statement3

e. NOT

51.
```
int x = 2;
int y = 1;
if( x > 0 && y < 2 )
        System.out.print("Is this printed? ");
{
if(x > 0 || y < 2)
System.out.print("Or is this printed? ");
}
else
        System.out.print("OR IS THIS PRINTED? ");
```

What is printed?

a) Is this printed?
b) Is this printed? Or is this printed?
c) OR IS THIS PRINTED? Or is this printed
d) Is this printed? OR IS THIS PRINTED?
e) NOT

52. class Mathm

```
{
        public static void main(String[] args)
        {
                Scanner kb = new Scanner(System.in);
                System.out.println("Please enter an integer");
                int num = 0, fnum  =  0;
                num = kb.readInt();
                fnum = num*2+20/5-4+6*2;
                System.out.println("The final number is " + fnum);
        }
}
```

if num = 10; what is the output?

a. The final number is 15 b. The final number is 32 c. The final number is 54
d. The final number is 0 e. NOT

53. To format a double using Format , what are the parameters (in order)?

a. decimal place , field width , real expression
b. real expression , field width , decimal place
c. real expression , decimal place , field width
d. field width, decimal place, real expression
e. decimal place, real expression, field width

54. In while(condition) , what must the condition evaluate as?

a. int b. char c. String d. String[] e. boolean

Read the following program segment and answer the following two questions :

```
public static int calculate(int num1 , int num2)
{
        //Preconditon : 2 positive integers 'num1' and 'num2'
        //                      num1 > = num2
        //Postcondition: returns 1 integer

        int num3 = num1%num2;
        while(num3! = 0)
        {
                num1 = num2;
                num2  = num3;
                num3 = num1 %num2;
        }
        return num2;
}
```

55. What is returned by the function call calculate (100, 88)?

a. 3 b. 4 c. 12 d. 88 e. NOT

56. What is the purpose of this method, calculate(int num1 , int num2)?

a. Returns the answer to num1 % num2
b. Returns the least common multiple of num1 and num2
c. Returns the greatest common factor of num1 and num2
d. Returns the original num2

57. In a for loop, incrementation occurs

a. before the statement within the loop's brackets is executed
b. after the statement within the loop's brackets is executed
c. after initialization
d. before the evaluation of the boolean expression in the condition
e. after the evaluation of the boolean expression in the condition

58. String a = new String("cow");
String b = "cat";
a = b;

At the end of this code , a and b refer to , respectively

a. cow , cat
b. cow , cow
c. cat , cat
d. cat , cat
e. cat , garbage

59.

```
public class ObjectReference
{
	public static void main(String[] args)
	{	String a = new String("first");
		String b = new String();
		String c = new String("first");
		String d = null;
		b = a;
		System.out.println(b);
		if( a.equals(c) )
			System.out.println("Same");
		if (a != null)
			System.out.println(a);
		if (b != null)
			System.out.println(b);
		if (c != null)
			System.out.println(c);
		if (d != null)
			System.out.println(d);
	 }
}
```

What is the output?

I. first II. null III. Same

a) I b) II c) III d) I , II , III e) NOT

60. Which code has only one alias?

a) String a = new String("Ha");
String b = new String("Ha");
System.out.println(b);

b) String a = new String("HA");
String b = new String("Ha");
String c = new String("Hi");
b = a;

c) String a = new String("Ha");
String b = new String();
b = a;

d) b & c

61. Using the option b from #60, what are a, b, and c, respectively, at the end of the code (after it has run)?

a) Ha, Ha, Ha b) HA, Ha, Hi c) HA, HA, Hi d) Ha, Ha, Hi

62. What String method is used to check if Strings are in lexicographic order?

a. equalsIgnoreCase() b. compareTo() c. lexicographer() d. sort() e. arrangeStrings()

63. "counter".substring(2,5) would return which of the following?

a. ount b. oun c. unt d. unter e. ounte

64. What does the following code print out?

```
class Test
{
    public static void main(String [] args)
    {       String x = "";                          //empty String
            for(int i = 0; i < 10;  i++)
            {
                x = x + "a";
            }
                x = x + " ";
                x = x.substring(0, x.length()-1)+(x.trim()).substring(0, 4);
                System.out.println(x);
            }
    }
}
```

a. "aaaaaaaaaaaaa" c. " aaa a aaaaa" e. " aaaaaaaaaaaaa"
b. "aaaaaaaaaaaaa " d. " aaaaaaaaaaaaa"

65. What does the following statement mean: "String objects are immutable after they are constructed."?

a. Strings can be re-declared with the new constructor.
b. Strings can't be altered in certain ways once they are constructed.
c. Strings are altered in certain ways once they have been constructed.
d. Strings are not susceptible to mutations.
e. A String that is constructed cannot be used with String methods.

66.
```
String a = new String("hi");
String b = new String("what");
String c = new String("is");
a = c;
c = b;
```

How many objects are left? (not including garbage)

a. 1 b. 2 c. 3 d. 0

67. How many object have been created?

a. 1 b. 2 c. 3 d. 4 e. 5

68. What of the following is/are alias(es) by the end of the program?

a. a b. b c. c d. a and b e. b and c

69. What does it mean when an object is null?

a. not a String
b. not a primitive data or reference data
c. has no object
d. object destroyed

70. Given the following: strA and strB are objects created with new String(…) and there are no other references. If strA = strB , what becomes garbage?

a. the object strA pointed to. b. the object strB pointed to. c. none d. both a and b

71. Sample Input and Output of Correct Program:

Input: **Enter a string:**
Java is the best class ever!

Output:
!reve ssalc tseb eht si avaJ

Which of the programs will "fling" a string, as shown above (assuming the Scanner class is supplied)?

a.
```
class strFlip
  {
    public static void main(String[] args)
    {
        Scanner tr =  new Scanner(System.in);
        String x , ent = "";  //ent is an empty String
        int len = 0;
        System.out.println("Enter a string:");
        x = tr.nextLine();
        len = x.length();
        for(int i = len-1; i > = (0); i++)
        {
          ent = ent + x.charAt(i);
        }
        System.out.println(ent);
    }
  }
```

b.
```
class strFlip
  {
    public static void main(String[] args)
    {
        Scanner tr = new Scanner(System.in);
        String x =  ent = "";
        int len = 0;
        System.out.println("Enter a string:");
        x = tr.nexLine();
        len = x.length();
        for(int i = len; i >= (0);  i--)
        {
          ent = ent + x.charAt(i);
        }
        System.out.println(ent);
    }
  }
```

c.
```
class strFlip
  {
    public static void main(String[]args)
    {
        Scanner tr = new Scanner(System.in);
        String x , ent = "";
        int len = 0;
        System.out.println("Enter a string:");
        x = tr.nextLine();
        len = x.length();
        for(int i  = len-1; i >= (0); i--)
        {
          ent = ent + x.charAt(i);
        }
        System.out.println(ent);
    }
  }
```

72. Read the following program and answer the question.

```
class Example1
{       public static void main(String[]args)
        {       String strA;
                String strB;
                strA =  new String("Santa Claus");
                strB  =  new String("Santa Claus");

                if ( strA == strB)
                        System.out.println("Happy Holidays");
                else if ( strA.equals(strB))
                        System.out.println("Merry Christmas");
        }
}
```

What will the output be?

a. Happy Holidays b. Santa Claus c. Happy HolidaysMerry Christmas d. Merry Christmas
e. None of these