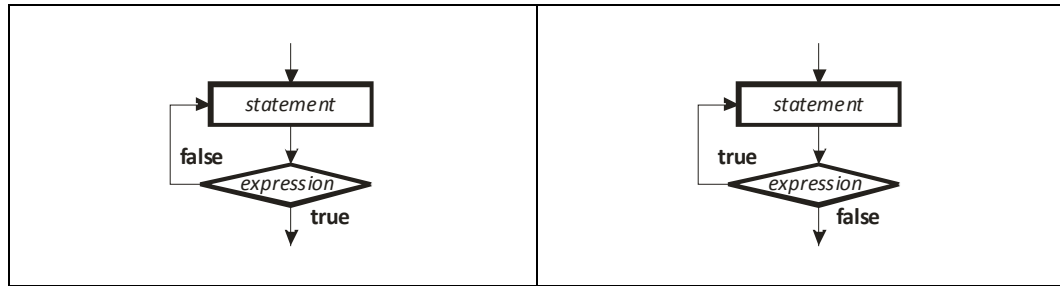


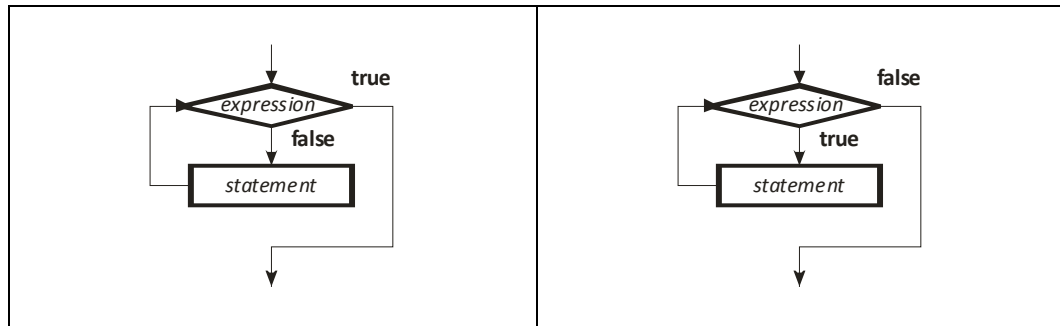
1. Record your answers on SCANTRON form **882-E (It is green!)**
2. Print your name on your scantron in the space labeled **NAME**.
3. Print **CMSC 1513** in the space labeled **SUBJECT**.
4. Print the date, **3-28-2013**, in the space labeled **DATE**.
5. Print your **CRN, 21638**, in the space labeled **PERIOD**.
6. Print the test number and version, **T2/V1**, in the space labeled **TEST NO**.
7. Cellular phones are prohibited. The possessor of a cellular phone will receive a **zero (0)** if the phone rings or is visible during the test.
8. You may use your personal calculator on this test. You are prohibited from loaning your calculator or borrowing a calculator from another person enrolled in this course.
9. Mark the best selection that satisfies the question. If selection **b** is better than selections **a** and **d**, then mark selection **b**. Mark only **one** selection.
10. Darken your selections completely. Make a heavy black mark that completely fills your selection.
11. Answer all **18** questions.
12. Record your answers on SCANTRON form **882-E (It is green!)**

1. (4.2) Which diagram best illustrates the control flow of the *while*-statement?



a.

b.



c.

d.

2. (4.2) How many times is the test on line 4 executed in diagram below?

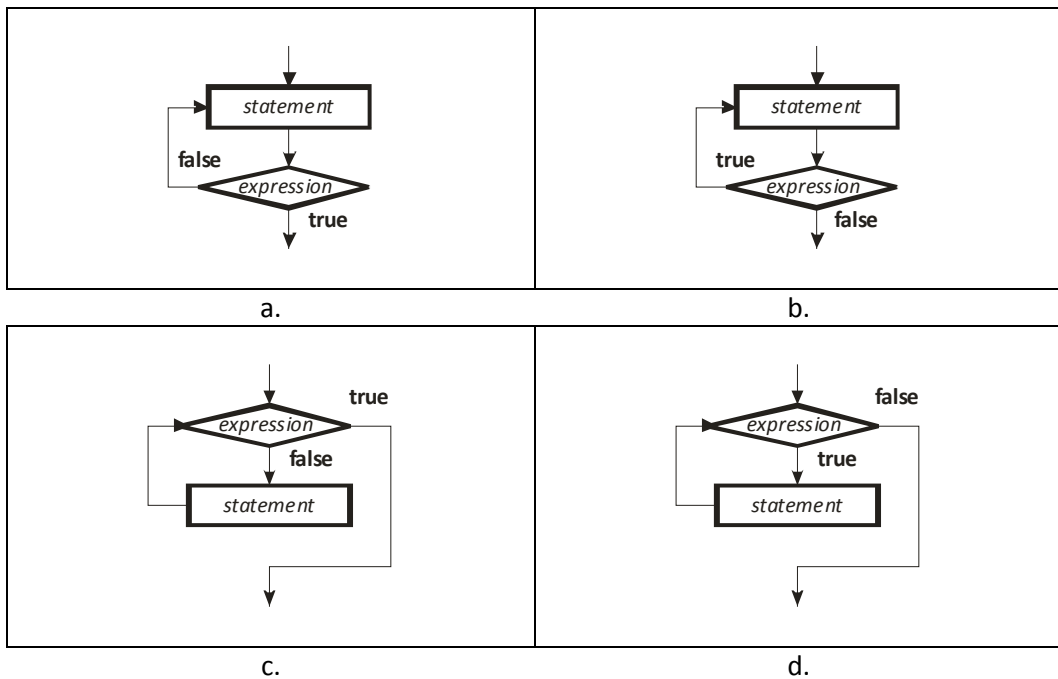
Line	Code
1	public class Q02 {
2	public static void main(String[] args) {
3	int count=0;
4	while (count < 10) {
5	System.out.print(count%3+" ");
6	count++;
7	}
8	System.out.println();
9	}
10	}

- a. 10
b. 11
c. 3
d. 4

3. (4.2) What is printed by the program in the figure below?

Line	Code
1	public class Q02 {
2	public static void main(String[] args) {
3	int count=0;
4	while (count < 10) {
5	System.out.print(count%3+" ");
6	count++;
7	}
8	System.out.println();
9	}
10	}

- a. 0 1 2 0 1 2 0 1 2 0
b. 0 1 2 3 4 5 6 7 8 9
c. 0 1 2 3 0 1 2 3 0 1
d. 0 1 0 1 0 1 0 1 0 1
4. (4.3) Which diagram best illustrates the control flow of the *do-while-statement*?



5. (4.3) How many times is the test on line 7 executed in diagram below?

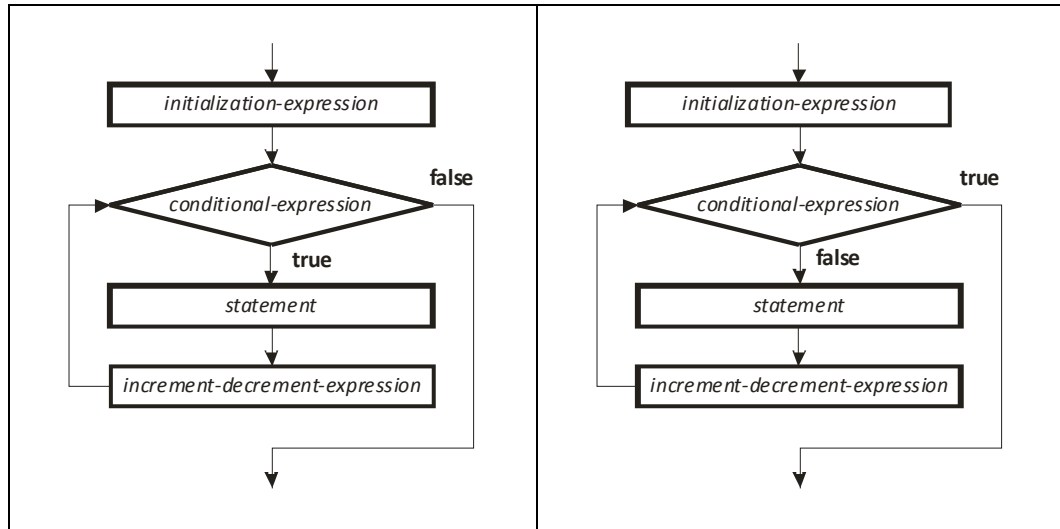
Line	Code
1	public class Q05 {
2	public static void main(<i>String</i> [] args) {
3	int count=10;
4	do {
5	<i>System.out.print</i> (count%4+" ");
6	count--;
7	} while (count>0);
8	<i>System.out.println</i> ();
9	}
10	}

- a. 10
 - b. 11
 - c. 3
 - d. 4
6. (4.3) What is printed by the program in the figure below?

Line	Code
1	public class Q05 {
2	public static void main(<i>String</i> [] args) {
3	int count=10;
4	do {
5	<i>System.out.print</i> (count%4+" ");
6	count--;
7	} while (count>0);
8	<i>System.out.println</i> ();
9	}
10	}

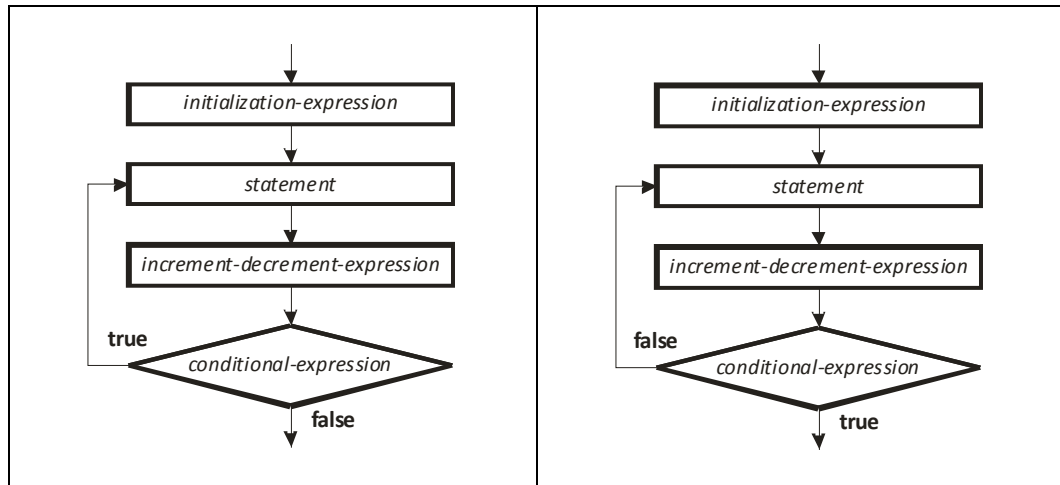
- a. 2 1 0 3 2 1 0 3 2 1
- b. 1 2 3 0 1 2 3 0 1 2
- c. 3 0 1 2 3 0 1 2 3 0
- d. 0 1 2 3 0 1 2 3 0 1

7. (4.4) Which diagram best illustrates the control flow of the *for*-statement?



a.

b.



c.

d.

8. (4.3) How many times is the test on line 3 executed in diagram below?

Line	Code
1	public class Q08 {
2	public static void main(<i>String</i> [] args) {
3	for (int count=0;count<10;count++){
4	System.out.print(count%4+" ");
5	}
8	System.out.println();
9	}
10	}

- a. 10
 - b. 11
 - c. 3
 - d. 4
9. (4.3) What is printed by the program in the figure below?

Line	Code
1	public class Q08 {
2	public static void main(<i>String</i> [] args) {
3	for (int count=0;count<10;count++){
4	System.out.print(count%4+" ");
5	}
8	System.out.println();
9	}
10	}

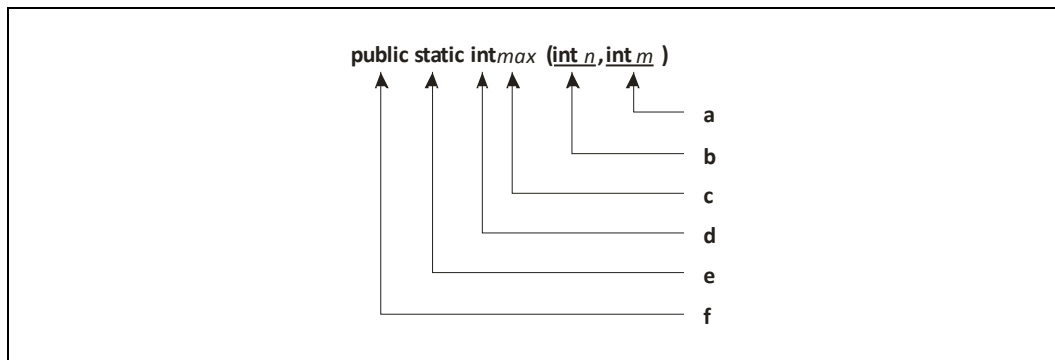
- a. 2 1 0 3 2 1 0 3 2 1
- b. 1 2 3 0 1 2 3 0 1 2
- c. 3 0 1 2 3 0 1 2 3 0
- d. 0 1 2 3 0 1 2 3 0 1

10. (5.2)What term is used to describe the contents of the diagram below?

Line	Code
1	public static int <i>max</i> (int <i>a</i> , int <i>b</i>)
2	{ int <i>result</i> ;
3	if (<i>a</i> > <i>b</i>)
4	<i>result</i> = <i>a</i> ;
5	else
6	<i>result</i> = <i>b</i> ;
7	return <i>result</i> ;
8	}

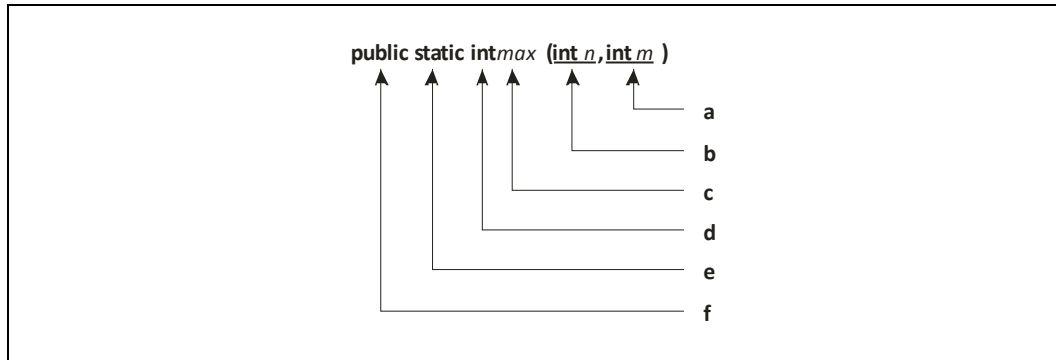
- a. function
- b. subroutine
- c. procedure
- d. method

11. (5.2)What term is used to describe the value pointed to by the arrow label f in the diagram below?



- a. modifier
- b. specifier
- c. designator
- d. signifier

12. (5.2)What are items a and b called?



- a. formal arguments
- b. actual parameters
- c. formal parameters
- d. actual arguments

13. (5.3)What is printed by the program in the diagram below?

Line	Code
1	public class Q13 {
2	public static int sum(int n){
3	int t=0;
4	for (int a=0;a<=n;a++) t+=a;
5	return t;
6	}
7	public static void main(String[] args) {
8	System.out.println(sum(10));
9	}
10	}

- a. 55
- b. 10
- c. 110
- d. 11

14. (5.3)What is printed by the program in the diagram below?

Line	Code
1	public class <i>Q14</i> {
2	public static int <i>roman</i> (<i>int v,int d,char m</i>){
3	while (<i>v>=d</i>){
4	<i>System.out.print</i> (<i>m</i>);
5	<i>v=v-d</i> ;
6	}
7	return <i>v</i> ;
8	}
9	public static void <i>main</i> (<i>String[] args</i>) {
10	int <i>v=5324</i> ;
11	<i>v=roman</i> (<i>v,1000,'M'</i>);
12	<i>v=roman</i> (<i>v, 500,'D'</i>);
13	<i>v=roman</i> (<i>v, 100,'C'</i>);
14	<i>v=roman</i> (<i>v, 50,'L'</i>);
15	<i>v=roman</i> (<i>v, 10,'X'</i>);
16	<i>v=roman</i> (<i>v, 5,'V'</i>);
17	<i>v=roman</i> (<i>v, 1,'1'</i>);
18	}
19	}

- a. MMMMMCCCXXIV
- b. MMMMMCCCXX1111
- c. MMMMMCCCXXIIII
- d. MMMMMCCCXX1V

15. (5.3) What is the value assigned to variable *v* on line 13?

Line	Code
1	public class <i>Q14</i> {
2	public static int <i>roman</i> (<i>int v</i> , <i>int d</i> , <i>char m</i>){
3	while (<i>v</i> >= <i>d</i>){
4	<i>System.out.print</i> (<i>m</i>);
5	<i>v</i> = <i>v</i> - <i>d</i> ;
6	}
7	return <i>v</i> ;
8	}
9	public static void <i>main</i> (<i>String[] args</i>) {
10	int <i>v</i> =5324;
11	<i>v</i> = <i>roman</i> (<i>v</i> ,1000,'M');
12	<i>v</i> = <i>roman</i> (<i>v</i> , 500,'D');
13	<i>v</i> = <i>roman</i> (<i>v</i> , 100,'C');
14	<i>v</i> = <i>roman</i> (<i>v</i> , 50,'L');
15	<i>v</i> = <i>roman</i> (<i>v</i> , 10,'X');
16	<i>v</i> = <i>roman</i> (<i>v</i> , 5,'V');
17	<i>v</i> = <i>roman</i> (<i>v</i> , 1,'I');
18	}
19	}

- a. 5324
- b. 324
- c. 24
- d. 4

16. (5.3) In what order should the values listed be entered to find a monthly payment for a \$100,000 loan at 3 APR for 30 years?

Line	Code
1	import <i>java.util.Scanner</i> ;
2	public class Q16 {
3	public static double <i>Principal</i> (<i>Scanner input</i>){
4	<i>System.out.print</i> ("Enter the principal. ");
5	return <i>input.nextDouble</i> ();
6	}
7	public static double <i>InterestRate</i> (<i>Scanner input</i>){
8	<i>System.out.print</i> ("Enter the APR. ");
9	return <i>input.nextDouble</i> ()/1200;
10	}
11	public static int <i>Term</i> (<i>Scanner input</i>){
12	<i>System.out.print</i> ("Enter the number of years in the term. ");
13	return (int) <i>Math.round</i> (<i>input.nextDouble</i> ()*12);
14	}
15	public static double <i>Payment</i> (double <i>P</i> , double <i>i</i> , int <i>n</i>){
16	return <i>P*i/(1-Math.pow</i> (1+ <i>i</i> , <i>n</i>));
17	}
18	public static void <i>main</i> (<i>String[] args</i>) {
19	<i>Scanner input</i> = new <i>Scanner</i> (<i>System.in</i>);
20	double <i>P</i> = <i>Principal</i> (<i>input</i>);
21	double <i>i</i> = <i>InterestRate</i> (<i>input</i>);
22	int <i>n</i> = <i>Term</i> (<i>input</i>);
23	<i>System.out.printf</i> ("\$%.2f\n", <i>Payment</i> (<i>P</i> , <i>i</i> , <i>n</i>));
24	}
25	}

- a. 30 3 100000
- b. 100000 30 3
- c. 3 100000 30
- d. 100000 3 30

17. (5.3) What is the monthly payment for a \$100,000 loan at 3 APR for 30 years?

Line	Code
1	import java.util.Scanner;
2	public class Q16 {
3	public static double Principal(Scanner input){
4	System.out.print("Enter the principal. ");
5	return input.nextDouble();
6	}
7	public static double InterestRate(Scanner input){
8	System.out.print("Enter the APR. ");
9	return input.nextDouble()/1200;
10	}
11	public static int Term(Scanner input){
12	System.out.print("Enter the number of years in the term. ");
13	return (int)Math.round(input.nextDouble()*12);
14	}
15	public static double Payment(double P,double i,int n){
16	return P*i/(1-Math.pow(1+i,-n));
17	}
18	public static void main(String[] args) {
19	Scanner input=new Scanner(System.in);
20	double P=Principal(input);
21	double i=InterestRate(input);
22	int n=Term(input);
23	System.out.printf("%.2f\n",Payment(P,i,n));
24	}
25	}

- a. \$421.60
- b. \$417.34
- c. \$426.02
- d. \$419.46

18. (6.1)What is printed by the program in the diagram below?

Line	Code
1	public class <i>Q18</i> {
2	public static int <i>roman</i> (int <i>v</i> ,int <i>d</i> ,char <i>m</i>){
3	for (int <i>a</i> =0; <i>a</i> < <i>v</i> / <i>d</i> ; <i>a</i> ++) <i>System.out.print</i> (<i>m</i>);
4	return <i>v</i> % <i>d</i> ;
5	}
6	public static void main (<i>String</i> [] <i>args</i>) {
7	int <i>d</i> []= {1000,500,100,50,10,5,1} ;
8	char <i>m</i> []= {'m','d','l','c','x','v','i'} ;
9	int <i>v</i> = 5324 ;
10	for (int <i>a</i> =0; <i>a</i> < 7 ; <i>a</i> ++) <i>v</i> = <i>roman</i> (<i>v</i> , <i>d</i> [<i>a</i>], <i>m</i> [<i>a</i>]);
11	}
12	}

- a. mmmmmcccxi
- b. mmmmmllxxiii
- c. mmmmmcccxiv
- d. mmmmmllxxiv