

CSC 212
EXAM 1

```
//EXAM 1 Spring 2001
//write a c++ program to do the following.
//a- read from a keyboard the student id and three test grades.
//b- calculate the average of the three grades.
//c- print on the screen the output using the following format:
//id:yyyyy
//grades:aaa.bbb.ccc
//average:zzz
//where: vvvvv is the 5-digits student id.
//aaa is the grade of test 1
//bbb is the grade of test 2
//ccc is the grade of test 3
//zzz is the calculated average.
//d- the program should repeat steps a.b and c as long as the entered id is not equal to 0.
```

```
//EXAM 1 Spring 2001
#include<iostream.h>
void main()
{
    int count=1;
    while (count <=10)
    {
        cout<<(count %2 ? "++++++":"****")<<endl;
        ++count;
    }
}
```

```
//EXAM 1 Spring 2001
#include<iostream.h>
void main()
{
    int i,j,k;
    int x=0;
    for (i=1;i<=5;i++)
        for (j=1;j<=7;j+=2)
            for (k=1;k<=15;k+=3)
                x++;
    cout<<x<<endl;
}
```

```
//EXAM 1 Spring 2001
#include<iostream.h>
void main()
{
    int num=135,ord=100;
    int dig;
    while (num>0)
    {
        dig=num/ord;
        cout<<2+num/ord<<' ';
        num%=ord;
        ord/=10;
    }
}
```

```

//EXAM 1 Spring 2001
#include<iostream.h>
void main()
{
    int x,i=0,j=0,k=0;
    for(x=1;x<=35;x++)
        switch (x%7)
        {
            case 0:break; case 2:break; case 4:i++;break;
            case 1:j++; case 3:j++; case 5:j++;break;
            default :k++;
        }
    cout<<j<<endl;
}

```

```

//EXAM 1 Spring 2001
#include<iostream.h>
void main()
①
{
    int test;
    test=8;
    if(test>2)
    {
        cout<<test<<endl;
        if (test<=5)
            cout<<test<<endl;
        else;
        if (test<5)
            cout<<test<<endl;
        cout<<test<<endl;
    }
    else
    {
        cout<<test<<endl;
        cout<<test<<endl;
        cout<<test<<endl;
    }
}

```

```

//EXAM 1 Spring 2001
#include<iostream.h>
void main()
{
    int i=0;
    while(i<=4)
    {
        if (1-i%2)
            cout<<' ':;
        cout<<"@@@@"<<endl;
        i++;
    }
}

```

what is the output line of the following program?

The ASCII code of '0' is 48, that of 'A' is 65, that of 'Z' is 122

```

3) #include <iostream.h>
   void main()
   { cout << '\122' << endl; }

```

- a) 4
- b) 122
- c) Z
- d) R**
- e) None

$(122)_b = 1 \cdot 8^2 + 2 \cdot 8^1 + 2 \cdot 8^0 = 82 = 66 + 16 + 2$

what is the output of the following program when executed?

```

6) #include <iostream.h>
   void main()
   { int count = 1;
     while (count <= 10)
     { cout << (count % 2 ? "+++++" : "xxxxx")
       << endl;
       ++count;
     }
   }

```

- a)

```

xxxxx
+++++++
xxxxx
+++++++
xxxxx

```
- b)**

```

+++++++
xxxxx
+++++++

```
- c)

```

xxxxx
+++++++

```
- d)

```

+++++++
+++++++
+++++++

```
- e) None

Count	remainder
1	1
2	0
3	1
4	0
5	1
6	0
7	1
8	0
9	1
10	0

6) How many times the value of the variable test is displayed in this program?

```
#include <iostream.h>
void main()
{
    int test;
    test = 8;
    if (test > 2)
    {
        cout << test << endl;
        if (test <= 5)
            cout << test << endl;
    }
    else;
    if (test < 9)
    {
        cout << test << endl;
        cout << test << endl;
    }
    else {
        cout << test << endl;
        cout << test << endl;
    }
    cout << test << endl;
}
```

5/5
2/2

a) 1

b) 4

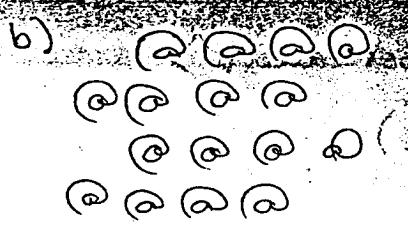
c) 2

d) 3

e) none

7) What is the output of the following program when executed?

```
#include <iostream.h>
void main()
{
    int i = 0;
    while (i <= 4)
    {
        if (1 - i % 2) cout << " ";
        cout << "@@@" << endl;
        i++;
    }
}
```



e) none

i	i%2
0	0
1	1
2	0
3	1
4	0

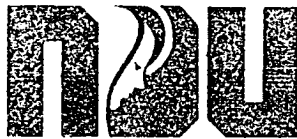
10) what is the output of the following progra? --

```
#include <iostream.h>
void main()
{
int int x, i=0, j=0, k=0;
for (x=1; x <= 100; x++)
switch (x%7)
{
case 0: break; case 2: break; case 4: i++; break;
case 1: j++; case 3: j++; case 5: j++; break;
default: k++;
}
cout << j << endl;
```

- a) 43 b) 44 c) 87 d) 88 e) none.

	1	2	3	4	5	6	7	8	9	10
0	14									
1	15									
2	15									
3	14									
4	14									
5	14									
6	14									

Case 1 Case 3 Case 5



```
# 9.) #include <iostream.h>
void main()
{
    int a[] = {4, 2, 3, 4, 5, 6, 7, 8};
    int *aptr = a;

    cout << a[0] + *(a+2) + aptr[4] + *(aptr+6);
}

```

1	2	3	4	5	6	7	8
---	---	---	---	---	---	---	---

↑
 ptr = &a
 *ptr = a[0]

1 3 4 5 7

Answer

- a) 12
- b) 16**
- c) 36
- d) $a[0] + *(a+2) + aptr[4] + *(aptr+6)$
- e) none of the above

```
# 10.) #include <iostream.h>
class shape
{
public:
    shape(int, int, int, int, int, int);
    double size1();
    double size2();

private:
    int x1, y1, x2, y2, x3, y3;
};

```

```
shape :: shape (int a, int b, int c, int d, int e, int f)
```

```
{  
  x1 = a ; y1 = b;  
  x2 = c ; y2 = d;  
  x3 = e ; y3 = f;  
}
```

```
double shape :: size1()
```

```
{  
  double i, j, k;
```

```
i = (y2 - y1) * (y2 - y1) + (x2 - x1) * (x2 - x1);
```

```
i = (y2 - y1) * (y2 - y1) + (x2 - x1) * (x2 - x1);
```

```
j = (y3 - y2) * (y3 - y2) + (x3 - x2) * (x3 - x2);
```

```
k = (y3 - y1) * (y3 - y1) + (x3 - x1) * (x3 - x1);
```

```
return i + j + k;
```

```
}
```

```
double shape :: size2()
```

```
{  
  double m, n, x, y;
```

```
m = (y3 - y2) + (x3 - x2) * (x3 - x2),
```

```
x = (x2 + x3) / 2;
```

```
y = (y2 + y3) / 2;
```

```
n = (y - y1) * (y - y1) + (x - x1) * (x - x1);
```

```
return m * n / 2;
```

```

{
void main()
{
shape s1(5, 6, 1, 1, 9, 1);
shape s2(8, 9, 2, 2, 8, 8);
shape *s2 = &s1;

cout << s1.size1() << endl;
cout << s2->size2() << endl;
}

```

Question:

Answer:

What is the first line output

a) 146

b) 324

c) 16

d) 64

e) None of the above

#11)

What is the second line output in number 10

a) 620

b) 800

c) 256

d) 600

e) None of the above

#12:

```
#include <iostream.h>
```

```
void main()
```

```
{  
  int a[] = {1, 2, 3, 4, 5, 6, 7, 8};
```

```
  int *x, *y;
```

```
  y = a + (sizeof(a)/4); a[5] + 8 = a[8]
```

```
  for (x = a; x <= y; x++)
```

```
    cout << *x;
```

Answer:

a) 12

b) 1234

c) 12345

d) 12345678

e) None of the above ✓

y = 1 + 8 = 3

for (x = a; x <= 3; x++)

cout << *x

1 2 3 ??



```
(16) #include <iostream.h>
```

```
int x = 10, y = 4;
```

```
void main()
```

```
{
```

```
{
```

```
int x = 2;
```

```
y += 3 * x;
```

$$y = y + (3 * x) = 4 + 6 = 10$$

```
int x = 3,
```

```
x := x - 10;
```

← Global x.

global
 $x = 10 = 10 - 10 = 0$
 $y = 10 \times 3 = 30$

```
y * x;
```

x initialized in the above

```
}
```

```
cout << x << " " << y << endl;
```

```
}
```

a) 10 20

b) 0 30

c) -10 30

d) 0 -20

e) None

iosette it is sign of and

```
(15) #include <iostream.h>
```

```
void t (int [][4], int, int (&));
```

```
const int maxsize = 4;
void main()
{
```

n.b iosette comma

```
int table [maxsize][maxsize] = { {1, 2, 3, 4}, {2, 3, 4, 5},
{3, 4, 5, 6}, {4, 5, 6, 7} }
```

n.b iosette semicolon

```
int u = 0;
t (table, maxsize, u);
cout << u << endl;
}
```

N.B iosette sign of and

```
void t (int tab[][maxsize], int max, int (&u))
{
int i, j;
```

1	2	3	4
2	3	4	5
3	4	5	6
4	5	6	7

```
for (i=0; i < max; i++)
for (j=0; j < max; j++)
if (i==1)
u += tab [i][j];
}
```

- a) 10
- b) 14
- c) 15
- d) 18

~~18~~

16

14

```

#include <iostream.h>
void processStr (char [], char []);
void main ()
{
    const int maxChars = 15;
    char str [] = "ab ac ad";
    char dest [maxChars];
    processStr (str, dest);
    cout << dest << endl;
}

```

capital letter

mb jostette & capital letter

capital letter

cap

```

void processStr (char src [], char dest [])
{
    int i, j;
    for (i=0, j=0; src[i] != '\0'; i++)
        if (src[i] != ' ')
            dest[j++] = src[i];
        else
            break;
    dest[j] = '\0';
}

```

capital letter

- a) a
- b) ab
- c) ab ac
- d) ab ac ad
- e) none

```

(13) #include <iostream.h>
void f(int, int);
int m = 5;
void main()
{
    int m1 = 1, m2 = 2;
    f(m1, m2);
}
void f(int a, int b)
{
    cout << a << " " << b << " ";
    a *= 2;
    b *= 3;
    --m;
    while (m) f(a, b);
    cout << endl;
}

```

- a) 2 6 4 18 8 54 16 162
b) 1 2 2 6 4 18 8 54 16 162
c) 1 2 2 6 4 18 8 54 16 162 32 486
d) 2 6 4 18 8 54 16 162 32 486
e) none

```

(12) #include <iostream.h>
void main()
{
    int a[] = {1, 2, 3, 4, 5, 6, 7, 8};
    int *x, *y;
    y = a + (sizeof(a)/4);
    for (x = a; x <= y; x++)
        cout << *x;
}

```

- a) 12
b) 1934
c) 19345
d) 19345678