COP 3223 Sec 2: Fall'09   C Programming   Test 1 Practice (50 points)

1. (10 points)
   Write down the printed output of this program. Mark your blank chars too.

```
                                                   WRITE YOUR OUTPUT BELOW HERE

                                                   -----------------------------------
    #include <stdio.h>                             |
                                        Out Line 1 |
    int main(void)                                 |
    {      float f;                                |
           int a,i;                     Out Line 2 |
           a = 0;                                  |
           a = a + 1;                              |
           printf ("A= %d\n", a);       Out Line 3 |
           a += 2;                                 |
           a--;                                    |
           a++;                         Out Line 4 |
           printf ("B= %d\n", a);                  |
           i=2;                                    |
           f=5.0;                       Out Line 5 |
           printf ("F= %f\n", f/i);                |
           a=5;                                    |
           printf ("C= %d\n", a/i);     Out Line 6 |
                                                   |
           return 0;                               |
    }
```

2. (10 points)
   Write down the printed output of this program. Mark your blank chars too.

```
                                                   WRITE YOUR OUTPUT BELOW HERE

                                                   -----------------------------------
    #include <stdio.h>                             |
                                        Out Line 1 |
    int main(void)                                 |
    {      float f;                                |
           int a,i;                     Out Line 2 |
           a = 0;                                  |
           a = a + 1;                              |
           printf ("A= %4d\n", a);      Out Line 3 |
           a += 2;                                 |
           a = a % 2                               |
           a++;                         Out Line 4 |
           printf ("B= %5d\n", a);                 |
           i=2;                                    |
           f=5.0;                       Out Line 5 |
           printf ("F= %6.2f\n", f/i);             |
                                                   |
           return 0;                               |
    }
```

3. (15 points) Trace the following program:

```
                                Prog    |       |       |       | print or
                                Line #  |   a   |   b   |   c   | other action
                                ------- |-------|-------|-------|---------
1. #include <stdio.h>                   |       |       |       |
2.                                      |       |       |       |
3.                                      ------- |-------|-------|-------|---------
4. int main(void)                       |       |       |       |
5. {                                    |       |       |       |
6.        int a=1 , b=4, c=3;           ------- |-------|-------|-------|---------
7.        a += 2;                       |       |       |       |
8.        if (a <= b)                   |       |       |       |
9.          {                           |       |       |       |
10.          if (b <= c)                ------- |-------|-------|-------|---------
11.            printf ("c= %d\n", c);   |       |       |       |
12.           else                      |       |       |       |
13.             printf ("c= %d\n",a+c); ------- |-------|-------|-------|---------
14.          }                          |       |       |       |
15.        else                         |       |       |       |
16.          printf ("b= %d\n", b);     ------- |-------|-------|-------|---------
17.        b -= 1;                      |       |       |       |
18.        if (a <= b)                  |       |       |       |
19.           printf ("a= %d\n", a);    ------- |-------|-------|-------|---------
20.        else                         |       |       |       |
21.           printf ("b= %d\n", b);    |       |       |       |
22.                                     ------- |-------|-------|-------|---------
23.                                     |       |       |       |
24.        return 0;                    |       |       |       |
25. }                                   ------- |-------|-------|-------|---------
                                        |       |       |       |
                                        |       |       |       |
                                        ------- |-------|-------|-------|---------
```

4. (25 points) Trace the following program:

ASSUME keyboard input IS: 2   ENTER YOUR TRACE BELOW

```
                                       Prog   |      |      |      | print or
                                       Line # |  a   |  i   |  n   | other action
                                       -------|------|------|------|--------
1. #include <stdio.h>                         |      |      |      |
2.                                     -------|------|------|------|--------
3.                                            |      |      |      |
4. int main(void)                      -------|------|------|------|--------
5. {                                          |      |      |      |
6.      int a, i, n;                   -------|------|------|------|--------
7.      a = 1; i = 1;                         |      |      |      |
8.      scanf("%d",&n);                -------|------|------|------|--------
9.      while (i <= n)                         |      |      |      |
10.       {                            -------|------|------|------|--------
11.        a = a * a + i * i ;                 |      |      |      |
12.        i++;                        -------|------|------|------|--------
13.        if (i <=n)                          |      |      |      |
14.           printf ("b= %d\n", a);   -------|------|------|------|--------
15.       }                                    |      |      |      |
16.      for (i=5; i>3; i--)           -------|------|------|------|--------
17.       {                                    |      |      |      |
18.          printf ("c= %d\n",a+i);   -------|------|------|------|--------
19.       }                                    |      |      |      |
20.      return 0;                     -------|------|------|------|--------
21. }                                         |      |      |      |
                                       -------|------|------|------|--------
                                              |      |      |      |
                                       -------|------|------|------|--------
                                              |      |      |      |
                                       -------|------|------|------|--------
                                              |      |      |      |
                                       -------|------|------|------|--------
                                              |      |      |      |
                                       -------|------|------|------|--------
                                              |      |      |      |
                                       -------|------|------|------|--------
                                              |      |      |      |
                                       -------|------|------|------|--------
                                              |      |      |      |
                                       -------|------|------|------|--------
                                              |      |      |      |
                                       -------|------|------|------|--------
                                              |      |      |      |
                                       -------|------|------|------|--------
                                              |      |      |      |
                                       -------|------|------|------|--------
                                              |      |      |      |
                                       -------|------|------|------|--------
                                              |      |      |      |
                                       -------|------|------|------|--------
                                              |      |      |      |
                                       -------|------|------|------|--------
```