ALL CAPS: First Name: .... Last Name: .... NID/PID..........

COP 3223 Sec 3: Spring ’24 C Progr Practice Test 1 (50 points)

- 1. (7 points)
  Write down the printed output of this program. Mark (show) your blank chars too .

```
                                                 WRITE YOUR OUTPUT BELOW HERE
                                                   ONLY THIS WILL BE GRADED
                                             ----------------------------------
#include <stdio.h>                           |
                                  Out Line 1 |
int main(void)                               |
{     float f;                               |
      int a,i;                    Out Line 2 |
      a = 4;                                 |
      a = a - 1;                             |
      printf ("P= %d\n", a);      Out Line 3 |
      a += 2;                                |
      a++;                                   |
      a = a % 2;                  Out Line 4 |
      printf ("Q= %4d\n", a);                |
      i=2;                                   |
      f=13.0;                     Out Line 5 |
      printf ("R= %6.2f\n", f/i);            |
      a=13;                                  |
      printf ("S= %d\n", a/i);    Out Line 6 |
                                             |
      return 0;                              |
}
```

- 2. (11 points) Trace the following program:

```
1. #include <stdio.h>
2.
3. int main(void)
4. {
5.       int a=5 , b=3, c=4;
6.       a += 1;
7.
8.       if (b >  c)
9.          printf ("a= %d\n", a+4);
10.      else
11.         printf ("b= %d\n", b);
12.
13.      b -= 2;
14.      if (a <= b)
15.        {
16.          printf ("c= %d\n", a+c);
17.        }
18.      else
19.        {
20.         if (b >  c)
21.           printf ("d= %d\n", a+c);
22.         else
23.           printf ("f= %d\n",  c);
24.        }
25.
26.      return 0;
27. }
```

IF YOU WISH, YOU CAN ENTER YOUR TRACE BELOW

Prog Line #	a	b	c	print or other action

WE GRADE ONLY YOUR FINAL OUTPUT BELOW

```
          |-----------------------
Outline 1 |
          |_______________________
          |
Outline 2 |
          |_______________________
          |
Outline 3 |
          |_______________________
          |
Outline 4 |
          |_______________________
```

- 3. (18 points) Write down the printed output of this program: (no need to mark blanks)

```
ASSUME keyboard input IS: 4

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

IF YOU WISH, ENTER YOUR TRACE BELOW

Prog Line #	p	i	n	print or other action

WE GRADE ONLY YOUR FINAL OUTPUT BELOW

Outline 1 | ______________________

Outline 2 | ______________________

Outline 3 | ______________________

Outline 4 | ______________________

Outline 5 | ______________________

Outline 6 | ______________________

- 4. (14 points) Write a complete C program that uses a FOR-loop to read in 50 integers. For each of the 50 integers, if it is greater than 100, it should be added into a sum that was initialized to zero. After the loop, multiply the sum by 85 and then print out the answer. Assume correct input.

- 5. (14 points) Write a complete C program that uses a FOR-loop to read in 41 integers. For each of the 41 integers, first multiply the integer by itself; if the result obtained (i.e., the squared value) is greater than 500, the original integer (before it was squared) should be added into a sum that was initialized to zero. After the loop, multiply the sum by itself and then print out the answer as an integer. Assume correct input.

- 6. (14 points) Write a complete C program that uses a FOR-loop to read in 10 integers. For each of the 10 integers, the program first multiplies the integer by 10, if the result obtained (i.e., after multiplying by 10) is greater than 85, the integer (as it was read in, i.e., before it was multiplied) should be added into a sum that was initialized to zero. After the loop is completed, multiply the sum by 100 and then print out the answer. Assume correct input.

  For example, if the input from the keyboard is:
  1 2 3 4 5 6 7 8 9 10
  we expect the final outputted answer to be: 1900

- 7. (14 points) Write a complete C program that uses a FOR-loop to read in 10 positive integers. For each of the 10 integers, if the integer is divisible by 5, the integer should be added into a sum that was initialized to zero. After the loop is completed, multiply the sum by 100 and then print out the answer. Assume correct input.

  For example, if the input from the keyboard is:
  11 12 13 14 15 16 17 18 19 20
  we expect the final outputted answer to be: 3500