COP 3223 Sec 2: Spr ’15  C Progr  Practice Test 1  (50 points)

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

```
#include <stdio.h>

int main(void)
{
    float f;
    int a,i;
    a = 4;
    a = a - 1;
    printf("P= %d\n", a);
    a += 2;
    a++;
    a = a % 2;
    printf("Q= %d\n", a);
    i=2;
    f=13.0;
    printf("R= %6.2f\n", f/i);
    a=13;
    printf("S= %d\n", a/i);
    return 0;
}
```
2. (11 points) Trace the following program:

```c
#include <stdio.h>

int main(void)
{
    int a=5, b=3, c=4;
    a += 1;
    if (b > c)
        printf("a= %d\n", a+4);
    else
        printf("b= %d\n", b);
    b -= 2;
    if (a <= b)
    {
        printf("c= %d\n", a+c);
    }
    else
    {
        if (b > c)
            printf("d= %d\n", a+c);
        else
            printf("f= %d\n", c);
    }
    return 0;
}
```

**WE GRADE ONLY YOUR FINAL OUTPUT BELOW**
• 3. (18 points) Write down the printed output of this program: (no need to mark blanks)

ASSUME keyboard input IS: 4

IF YOU WISH, ENTER YOUR TRACE BELOW

<table>
<thead>
<tr>
<th>Line #</th>
<th>p</th>
<th>i</th>
<th>n</th>
<th>other action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>#include &lt;stdio.h&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>int main(void)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>{</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>int p, i, n;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>p = 2; i = 3;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>scanf(&quot;%d&quot;,&amp;n);</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>while (i &lt; n)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>{</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>if (i &lt; n)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>printf(&quot;b= %d\n&quot;, p);</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>p = p + i * i ;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>i++;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>}</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>for (i=6; i&lt;8; i++)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>{</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>printf (&quot;c= %d\n&quot;,p+i);</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>}</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>return 0;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>}</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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. You **do not need to** include the stdlib or system(“pause”) statements.

   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. You **do not need to** include the stdlib or system(“pause”) statements.

   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