ENEE 140, Spring 2015
Final Exam — Answer Key

Do Not Make a Copy!!

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>1 (16):</td>
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<td>2 (10):</td>
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<td>3 (12):</td>
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<td>4 (8):</td>
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<td>5 (15):</td>
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<td>6 (5):</td>
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<td>7 (16):</td>
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<td>8 (18):</td>
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<td>TOTAL (100):</td>
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Problem 1. (16 points)

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Value</th>
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<tr>
<td>float r1 = c / d;</td>
<td>0.5</td>
</tr>
<tr>
<td>float r2 = a / (int)d;</td>
<td>0.0</td>
</tr>
<tr>
<td>int r3 = a % b;</td>
<td>1</td>
</tr>
<tr>
<td>unsigned r4 = UINT_MAX % 2;</td>
<td>1</td>
</tr>
<tr>
<td>int r5 = a &amp; b;</td>
<td>1</td>
</tr>
<tr>
<td>int r6 = e++;</td>
<td>4</td>
</tr>
<tr>
<td>int r7 = (a - (unsigned)b) &gt; 0;</td>
<td>1</td>
</tr>
<tr>
<td>float r8 = (a / b &gt; 0) ? c : d;</td>
<td>2.0</td>
</tr>
<tr>
<td>int r9 = b &gt;&gt; 1;</td>
<td>1</td>
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Problem 2. (10 points)

Answer:

\( a = 0 \) is not true.

\( a == 0 \) is true.
Problem 3. (12 points)

\[ i = 6 \quad k = 11 \]
Problem 4. (8 points)

ENEE 140 Exam
Problem 5. (15 points)

```c
#include <stdio.h>

int main (int argc, char *argv[])
{
    switch(argc)
    {
    case 1:
        printf("You did not provide any input.\n");
        break;
    case 2:
        printf("You are signed up for %s.\n", argv[1]);
        break;
    case 3:
        printf("You are signed up for %s in the %s semester.\n", argv[1], argv[2]);
        break;
    default:
        printf("Too many arguments!\n");
    }

    return 0;
}
```
Problem 6. (5 points)

Answer: 4
Problem 7. (16 points)

```c
char first[8];
printf("What is your first name?\n");
scanf("%s",first);
int i;
for(i=0;i<8;i++) {
    if(first[i]>'a' && first[i] <='z') {
        first[i] = first[i] - 32;
    }
}
printf("%s",first);
```
Problem 8. (18 points)

A.
\[ r = (2*\text{rand()} \mod 10) \times 21; \]

B. The program generates a random permutation of the 10 odd numbers between 20–40 (i.e. 21, 23, 25, ...39). The variable \( f \) is a flag variable which indicates whether or not a number was previously generated.