PRG155 – Programming Fundamentals Using C

Lecture Test 1

Student Name		Section	
Student ID		Date	

1. (1 mark each) Determine the EXACT output of each of the following programs:

<table>
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```
#include<stdio.h>
int main(){
    int maxV=60;
    int minV=20;
    int avgV;
    avgV = maxV + minV / 2;
    printf("%d", avgV);
    return 0;
}
```

</td><td>**Output:**</td></tr>
<tr><td>

```
#include<stdio.h>
int main(){
    int var1=2, var2;
    var2=2+3*var1++;
    printf("%d\n%d",var1, var2);
    return 0;
}
```

</td><td>**Output:**</td></tr>
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2. (1 mark) If choice is 'a', what will be the output that is displayed?

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```
switch(choice)
{
    case 'q':
    case 'R':
        printf("Programming");
    case 'B':
    case 'a':
        printf("C");
    default:
        printf("Seneca");
}
```

</td><td>**Output:**</td></tr>
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3. (4 marks) Write a C code segment that prompts the user to enter capacitance C and frequency f. The program should calculate reactance $(X = \frac{1}{2\pi fC})$, where π = 3.14, and print the result to 2 decimal places. You may use the back of this page if you need more space. Do not detach any pages!

4. (.5 mark each) Circle True or False for the following statements:

If a=6 and b=15, the expression: **!(b<=12) && a%2 ==0** will produce:	True	False
If double a=6, **printf("%lf", a);** will produce **6.00**	True	False
The expression **y+=x** is equivalent to **y=x+1**	True	False
9_num is a valid variable name	True	False

5. (2 marks) Fill in the missing code fragments where underlined.

```
/* This code is intended to calculate and display the cost of
shipping a package based on its weight. The cost is calculated as
follows: $7 for packages weighing less than five pounds, $12 for
packages weighing five pounds or more but less than twelve pounds,
and $20 for packages weighing twelve pounds or more.*/

if (weight<5)
{
     shippingCost = 7;
}
else if (_____) //missing if condition
{
     shippingCost = 12;
}
else
{
     shippingCost = 20;
}
printf(_____) //missing code: display
                                          //shipping cost
```

6. (4 marks) Write a C code segment that prompts the user to enter the number of hours an employee worked last week. The program should compute and display a person's weekly gross salary as determined by the following: If the hours worked are less than or equal to 44 hours, the person receives $18.00 an hour. If the person works over 44 hours, the person receives $792.00 plus $27.00 for each hour worked over 44 hours. You may use the back of this page if you need more space. Do not detach any pages!