CPET 1120 - C Programming For Engineering Technology **July 11, 2022**

Name:_____ **Homework 5**

1. Which of the following shows how to correctly declare pointer variable x?
A. int x;
B. int &x;
C. ptr x;
D. int *x;

2. Which of the following is used to store the memory address for variable a into pointer variable x?
A. x = *a;
B. x = a;
C. x = &a;
D. *x = &a;

3. Which of the following dereferences pointer variable x and stores it in variable a?
A. a = x;
B. a = *x;
C. a = &x;
D. a = val(x);

4. What number is printed on the screen after the below program executes?

```
# include <stdio.h>
void ouch(int *ptr);
void main(void)
{
  int y = 20;
  ouch(&y);
  printf("%d", y);
}
void ouch(int *ptr)
{
  *ptr = 30;
}
```

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5. What number is printed on the screen after the program executes?

```
# include <stdio.h>
void ouch(int ptr);
void main(void)
{
  int y = 30;
  ouch(y);
  printf("%d", y);
}
void ouch(int ptr)
{
  ptr = 20;
}
```

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6. Analyze the main() program and the oops() function definition to determine what the program accomplishes. Do this by mentally stepping through each line of program code while filling in, and updating, the main() and oops() Variable Values fields in the Variable Analysis Table below. Start listing the values at the left of each row and then lightly cross out each old value after an updated value is generated.

main() Variable Names	main() Variable Values	main() Variable Addresses
a		1000
b		2000
ptr		3000
oops() Variable Names	oops() Variable Values	oops() Variable Addresses
b		5000
c		6000
one		7000
two		8000

Variable Analysis Table

```
#include "stdio.h"
void oops (int *one, int *two);
void main(void)
{
  int a, b = 5, *ptr = &a;
  a = 2;
  b = *ptr * 10;
  *ptr = a + b;
  oops(ptr, &b);
  oops(&a, &b);
}
void oops (int *one, int *two)
{
  int b, c;
  b = *one;
  c = *two;
  *one = c;
  *two = b;
}
```

What does the main and oops programs accomplish?

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