Name:_____

1   Given the table of C Code Statements, variable names and variable values, determine
     the variable values **after** each code statement is executed.

C Code Statements	Variable name	Variable value	Variable name	Variable value
int num1 = -2, num2 = 4;	num1		num3	
	num2		num4	
float num3 = 1.25, num4 = 2.5;	num1		num3	
	num2		num4	
num1 = num1 + num2 * num2;	num1		num3	
	num2		num4	
num4 = num1 * num3;	num1		num3	
	num2		num4	
num2 = num2 / num1;	num1		num3	
	num2		num4	
num3 = num1 / num2 + 3;	num1		num3	
	num2		num4	
num1 =+ num4;	num1		num3	
	num2		num4	
num3 += num2;	num1		num3	
	num2		num3	

2   Identify whether each of the following declarations, and/or assignments, is valid or
     invalid – no loss of data. Use previous statements to determine if current
     statements are valid.

     int i = 0, j = -1;   _____

     float k = 2, m = 5.5;   _____

     i = m;   _____

     8 = k;   _____

     k = j * 2;   _____

3   Identify each of the following C identifiers as legal or illegal.

     which_2   _____

     2_up   _____

     two_down   _____

     one-up   _____

     P_=_I*_R   _____

4   For the C statement shown below, write the exact statement that what would be
     displayed on the screen.

     printf("The number %6.2f looks like what on the screen?/n", 2.2858);

     Statement - _____

5   Determine if there are any errors in the main program listed below that would prevent
     main from compiling. If there are errors, correct the errors so the program will
     compile. If there are no errors, write none in the space provided.

```
void main(void)
{
    float one_var = 15, 2_var, three_var = 1;
    three_var =* one_var;
    three_var = three_var + one_var
}
```

Correction - _____

6   Analyze the program below and write on the blank line the exact statement displayed
     on the screen after the program executes.

```
#include <stdio.h>
int num(int x, int y);
void main(void)
{
    int ans1 = 5, a = 5, b = 2;
    ans1 = num(a, b);
    printf("The result is %d and the inputs are %d and %d.",ans1, b, a);
}
int num(int x, int y)
{
    return(2*x + 5*y);
}
```

Statement - _____

7. Which of the following is not a proper function prototype?
A. int funct(char x, char y);
B. double funct(char x)
C. void funct();
D. char x();

8. What is the return type of the following function prototype?
   int func(char x, float v, double t);
A. char
B. int
C. float
D. double

9. Which of the following is a valid function call (assuming the function exists)?
   void funct(void);
A. funct;
B. funct x, y;
C. funct();
D. void funct();

10. Which of the following is a complete function definition?
A. void funct(void);
B. int funct(int x) {return x=x+1;}
C. int funct(int) {printf("Hello");
D. void funct(x) {printf("Hello"); }

11. When creating a user generated function, what procedure is followed?
a) create a function prototype before main()
b) create a function definition after main()
c) create a function definition before main()
d) all of the above

12. If creating a user function, where should the prototype be located within the program?
a) after int main(void)
b) before int main(void)
c) a function prototype is not necessary

13. For function prototype -> double numbers (int x);, what is the name of the function?
a) double
b) int x
c) numbers

14. For function prototype -> double numbers (int x);, what data type will this function return?
a) int
b) double
c) char

15. For function prototype -> double numbers (int x);, what data type will this function receive?
a) int
b) float
c) char

16. For function prototype -> void numbers (int x, int y);, what is the correct way to call this function within the main program?
a) numbers (x)
b) numbers (y)
c) numbers (x,y)

17. If a variable is declared inside a function block, what kind of variable is this?
a) global variable
b) local variable
c) extended variable

18. If we have function -> int stop (int n), are we able to send/pass it a different variable in the main program or does it have to be a variable called n? For example, stop (x)
a) yes
b) no

19. Convert the following binary numbers into a decimal number:

a. 00010101
b. 00011001
c. 00100000
d. 00111111

a _____

b _____

c _____

d _____

20. Convert the following decimal numbers into a binary number:

a.   50
b.   100
c.   128

a _____

b _____

c _____

21. Perform the addition of the following unsigned (i.e., not two's complemented) binary numbers:

```
        (a) 1111      (b) 1011      (c) 1110011
          + 1010        + 0011        + 0011110
```


22. Given the following unsigned six-bit numbers. Perform bitwise addition and indicate which addition operations produce an overflow.

```
        (a) 111100              (b) 101100              (c) 111001
          + 001011                + 001100                +   011001
```


23. Express the following numbers as 8-bit binary numbers in two's complement notation:

a.   127
b.   -1
c.   0
d.   -128

a _____

b _____

c _____

d _____

24. Convert the following six-bit, signed, two's complement numbers into decimal:

a.   010111
b.   110111
c.   011111
d.   100000

a _____

b _____

c _____

d _____

25. Convert the following binary numbers into hexadecimal:

a.   10110010101001001
b.   10000000001
c.   1111111
d.   110011

a _____

b _____

c _____

d _____

26. Convert the following hexadecimal numbers into binary:

a.   ABCD
b.   1010
c.   23AC

a _____

b _____

c _____

27. What does 0x34 in hex represent when displayed as a character?