EE 2905

Dr. Johnson

Homework 3

1 – Evaluate each of the following expressions – given: 30pts

```
int8_t a;      a = 4;
int8_t b;      b = 100;
int8_t c;      c = 50;
```

		Decimal value
b +		???
a / b	int division	0
c % b	50/100 = 0r50	50
c * a	“200” -> 8 bit overflow 1100 1000 -> (-)0011 1000 = -56	-56
c >> 3	0011 0010→ 0000 0110	6
3 << a	0000 0011 → 0011 0000	48

2 – Evaluate each of the following expressions – given: 20pts

```
int8_t a;      a = 5;
int8_t b;      b = 4;
int8_t c;      c = 3;
uint8_t d;     d = 240;
uint8_t e;     e = 11;
uint8_t f;     f = 12;
```

Decimal value

a*b/c|a&b-c%a+b

(a*b/c) | a & (b – (c%a) + b)
6 | 5 & (4 – 3 + 4)
6 | 5 & 5
6 | 5 → 7

7

d-e%f>>3<<3%2

((~) – (e%f))>>3<<(3%2)
(240-11)>>3<<1
(229 >>3)<<1
(1110 0101 >>3) << 1
00011100 <<1 → 00111000
56

56

3 – Evaluate each expression individually. 20pts

int a;	a = 4;	float c;	c = 1.1;	char e;	e = ‘a’;
int b;	b = 5;	float d;	d = 2.2;	char f;	f = ‘C’;

		Decimal value
- -a - b + e++	(--a) - b + (e++) 3 - 5 + 97 = 95	95
b+++a- - -e	(b++)+(a--)-e 5 + 4 - 97 = -88	-88

4 – evaluate each statement and indicate the type of the result. 15pts

```
int a;          float c;        char e;
int b;          float d;        char f;
int foo;        float boo;      char soo;
a = 4;          c = 1.1;        e = 'a'
b = 5;          d = 2.2;        f = 'C'
```

		Value	Type
boo = b - a;	5 - 4 → 1 boo float → 1.0	1.0	float
foo = c / d;	1.1/2.2 = 0.55 foo int → 0	0	int
boo = b % (int) c + 2;	(5 % 1)+ 2 0 + 2 → 2 boo float → 2.0	2.0	float

5 – Evaluate the following expressions individually. 15pts

```
int a;      int b;      int c;      int d;
a = -3;     b = 6;      c = 1;      d = -2;
```

		True/False
a + b > c + d	(-3 + 6) > (1 + -2) 3 > -1 → T	True or 1
a – 2 * b + b > c * 2 /3	(-3 – (2 * 6) + 6) > ((1 * 2) / 3) (-3 – 12 + 5) > 0 -10 > 0 → F	False or 0
3 * b / 4 % 5 && b	((3 * 6 / 4) % 5) && 6 (4 % 5) && 6 4 && 6 → T	True or 1