**Student Number: Answers** Name: Solutions

Osmangazi University, Faculty of Engineering & Architecture

Departments of Electrical & Computer Engineering "Introduction to Programming"

07.11.2009 1<sup>st</sup> midterm

1. Evaluate the following unsigned conversions.

```
a. (330)_{dec} = ( 101001010 )_{bin} b. (01110101000111100011)_{bin} = ( 751E3 )_{hex} c. (0110)_{hex} = ( 272 )_{dec} d. (1234)_{oct} = ( 668 )_{dec} e. (111010100101)_{bin} = ( 7245 )_{oct}
```

2. Evaluate the following binary operations in 8 bit 2s complement arithmetic. Indicate overflows.

```
a. 10010011 + 10100011 = 00110110 (overflow)
b. 00000011 - 10101010 = 01011001
c. 00000101 x 00001001 = 00101101
d. 10000010 + 10001010 = 00001100 (overflow)
e. 01110100 / 00000100 = 00011101
```

3. Put ✓ mark in ✓ column if the declaration of standard C-type is valid. Put x mark in x column otherwise. Leave both columns blank if you cannot decide. Assume that no new type is defined previously.

$\checkmark$	х	
<b>√</b>		long i=1.1;
	x	Double d=3.14, z;
✓		int a; int b;
<b>✓</b>		signed short _float;
	x	int_ c=0, d=1;
	x	double d, int b;
	x	inti_;
<b>√</b>		long double L8NG;

✓	х	
<b>✓</b>		unsigned char _0=300;
<b>✓</b>		unsigned Signed;
	x	signed double x1 ;
	x	void y, z;
<b>✓</b>		double main, idea;
	x	char Double, Mouble
✓		double word, integer;
	x	int w\$==4;

4. Determine what is printed on the screen when the given code is executed.

```
int main(void) {
  printf("Hello %X",16384);
  return 0; }
```

```
Hello 4000
```

5. Determine the line number of the compiler error in the following function?.

6. Determine what is printed on the screen when the given code is executed.

```
int main(void){ int pi=3.1415, e=2.71828;
  printf("%d",e); printf("%d",pi);
  return 0; }
23
```