**Andrew won**

**1.1.3 Review**

1. An assembler is a program that converts source-code programs from assembly language into machine language. A companion program, called a linker, combines individual ﬁles created by an assembler into a single executable program

3. One line of high level language code is broke into many different instructions in machine language.

8. Type checking in C++ is stricter than it is in assembly language

12.

mov eax, Y

mov ebx, 4

imul ebx

add eax, 3

mov X, eax

**1.2.1 Review**

2. Interpretation for code needs to be translated simultaneously when they are executing, and this process happens every time the program is executed. Translation process only happens first time the program is executed making it less time-consuming.

3. True. Computers only understand and execute programs written in machine language(0 and 1).

10. Assembly is translated to Instruction set architecture (ISA).

**1.3.9 Review**

2.

A) 248

B)202

C)240

3.

A)00010001

B)101000000

C)00011110

**1.7.1 Short Answer**

1. Left most bit of an 8-bit binary is known as the most significant bit(MSB)

2.

A) 53

B)150

C)204

3.

A) 110001010

B)110010110

C)100100001

4.00000110

5.

A) 16 bits

B) 32 bits

C) 64 bits

D) 128 bits

6.

A) 12 bits

B) 16 bits

C) 16 bits

7.

A) 35DA

B) CEA3

C) FEDB

8.

A) 0000 0001 0010 0110 1111 1001 1101 0100

B) 0110 1010 1100 1101 1111 1010 1001 0101

C) 1111 0110 1001 1011 1101 1100 0010 1010

9.

A) 58

B) 447

C) 4097

10.

A) 98

B) 1203

C) 671

11.

A) FFE8

B) FEB5

12.

A) FFFFFFFFFFFFFFEB

B)FFFFFFFFFFFFFFFD3

13.

A) 27641

B) -16093

14.

A) 1966

B) -32208

15.

A) -75

B) +42

C) -16

16.

A) -128

B) -52

C) -73

17.

A) 11111011

B) 11010110

C) 11110000

18.

A) 10111000

B) 10011110

C) 11100110

19.

A) AB2

B) 1106

20.

A) B82

B) 1316

21.

Hex:42

Decimal: 66

22.

Hex: 47

Decimal: 71

25.

|  |  |  |  |
| --- | --- | --- | --- |
| A | B | AvB | ￢AvB |
| F | F | F | T |
| F | T | T | F |
| T | F | T | F |
| T | T | T | F |

**1.7.2 Algorithm WorkBench**

**Problem 3:**

#include<iostream>

#include<string>

#include<math.h>

using namespace std;

int binary\_to\_decimal(string binary){

int decimal = 0,indexCounter=0;

int size = binary.size();

if(size>16){

cout<<"binary digit is more than 16 bit: "<<endl;

exit(1);

}

else{

for(int i=size-1;i>=0;i--){

if(binary[i]=='1'){

decimal += pow(2, indexCounter);

}

indexCounter++;

}

}

return decimal;

}

int main(){

string str;

cout<<"Enter Binary No.: ";

cin>>str;

cout<<"Equivalent Decimal Is: "<<binary\_to\_decimal(str);

}

**1.4.2 Review**

1. (NOT X) OR Y

2. X AND Y

3. T

4. F

5. T