F2011 – EEE 174 Exams 1. Given the short code, what is the value in AX after the program is run?

**0500** 2. A “pull down” resistor is used in digital circuits to do what? **To keep the signal line “tied” low until the line is active (goes high)** 4. Ladder Logic is used in? **PLCs** 5. If CX is 0001, what will CX be after a “LOOPNZ” instruction? **0000** 6. If the SP is F00F, what is the SP value after a “POP CX” instruction? **F011** 7. The acronym PWM used for motor control, is defined as which of the following? **Pulse Width Modulation** 8. How many bit(s) is/are required to represent a range of decimal numbers from 0 to 9? **4** 9. In the PIC18 with TRISD = 0b01000000, what is the configuration of the port D? **Bit 7 of port D is set to input** 10. Which of the following is not a valid command for a number into a register in MASM? **MOV AX,BADH**  11. You are trying to rebuild a HELLO project in MASM and you get the following error: “LINK : warning L4021: no stack segment”. What would be the reason for such an error? **No project template for COM was selected**  12. What flag(s) does the “LOOPNE” instruction look at to determine whether to loop or not? **ZF**

13. In the propeller microcontroller, the command “dira[4..9] := %000000” would cause the processor to do which of the following? **Sets the propeller pins P4 through P9 as input pins**  14. What command in MASM-­‐CodeView would be used to step through a program line by line? **T (F8)**  17. In MASM, with a “MOV CX, 18h” instruction, and a “LOOP” instruction, in decimal how many times will the program loop? **24** 18. A “PUSH” instruction: **Decrements the SP** 19. In the Hello MASM lab in the original code, what is the address of the byte used to start the number in the sequence “Hello World 0”? **020E** 20. In the propeller microcontroller, the command “waitcnt(clkfreq^5 + cnt)” would cause the processor to do which of the following? **A 5 second delay** 21. ADD’ing 10H and 2FH will result in which of the following? **3F** 22. A “pull up” resistor is used in digital circuits to do what? **To keep the signal “tied” high until the line is active (goes low)** 23. With a POPA instruction, what will be the order of the accumulator, base, count, and data registers restored from the stack? **BDCA** 24. In the propeller microcontroller, the term “Method” is(are) which of the following? **A block of executable commands that has variables, can receive parameters, and returns a value** 25. If the SP is F00F, what is the SP value after a “PUSH DX” instruction? **F00D**

27. What type of program is this? AX=0000 BX=0000 CX=0000 DX=0000 SP=FFEE BP=0000 SI=0000 DI=0000 DS=1376 ES=1376 SS=1376 CS=1376 IP=0115 NV UP EI PL NZ NA PO NC 1376:0115 0100 ADD [BX+SI], AL DS: 0000=CD **COM** 29. What is -­‐34 decimal in 2’s complement (8 bits)? **1101 1110** 32. In the propeller, how many values does a method return? **1**  33. AND’ing 10H and 2FH will result in which of the following? **0** 34. In the propeller microcontroller, the command “dira[4..9] := %000000” would cause the processor to do which of the following? **Sets the propeller pins P4 through P9 as input pins** 35 The ladder logic diagram would represent which of the following?

**AND** 36. Which of the following is a valid x86 command for multiplying a number? **MUL BX** 37. The instruction MOV CX, [SI] is what addressing mode? **Register indirect** 38. On the PPE board, what number(s) on the key pad is(are) pressed for an output port value of 02h and an input port value of 2Fh? **5** 39. In MASM, with a “MOV CX, 24” instruction, and a “LOOP” instruction, how many times will the program loop in decimal? **24** 40. The letters “NC” labeled on relays and PLCs means which of the following? **Normally closed**

41. The ladder logic diagram would represent which of the following?

**OR** 42. If you want to use a INT software interrupt function to print a string out to the screen, what is the function code, start pointer, termination character, and interrupt you need to use? **ah = 09h, ds:dx, “$”, 21h** PART1-­‐2-­‐3-­‐4-­‐5-­‐6  2. How many flip flops would be required for a 9 state, State Machine? **4** 3. If 10Hex is XNOR with 2FHex would result in which of the following Decimal numbers? **C0** 4. A Mealy state machine: **The output depends on input and the current state; the next state depends on input and current state.** 5. A “pull up” resistor is used in digital circuits to do what? **To keep the signal “tied” high until the line is active (goes low)** 6. How many bits would be required to count from 0 to 511 in binary? **9** 7. 36 decimal would be what value in hexadecimal? **24**

8. The ladder logic diagram would represent which of the following?

**NAND** 9. What is the difference between a half adder and a full adder? **The half adder is missing a carry in** 10. Which gate would be used for the function, F= /C/D + CD? **XNOR** 12. A Moore state machine: **The output depends on the state, the next state depends on input and current state.** 13. The ladder logic diagram would represent which of the following?

**NOR** 14. The number of bytes needed for a 32 bit number are: **4** 15. How many bits would be required to count from 0 to 1023 in binary? **10** 16. What is the signed decimal value of the hex number, FFF0? **-­‐16**

17. In the truth table shown; how many Karnaugh maps would be required to solve the truth table?

**4** 18. In the truth table shown; in mapping values into the karnaugh map what value would be assigned to the states A to F?  **X or d for don’t care** 19. A “pull down” resistor is used in digital circuits to do what? **To keep the signal line “tied” low until the line is active (goes high)** 21. In the truth table shown; how may Karnaugh maps would be required to solve the truth table?

**7**

22. In the truth table shown; in mapping values into the Karnaugh map what value would be assigned to the states 10 to 15?

**0** 23. If 10Hex is ADDed to 2FHex would result in which of the following Hex numbers? **3F** 24. In 8 to 1 Multiplexer show, if A = 1, B = 0, C = 0, D = 1; what would the output be equal to?

**1** 25. Given a 4 bit adder with carry out, S4, adding two four bit numbers A and B. If A= 8 and B = 8, what would the values of S4, S3, S2, S1, S0 be? **10000**

26. In 8 to 1 multiplexer shown, with A=0, B = 1, C = 1; what would the value of output Y be equal to?

**0** 27. What would 6A Hex equal in base 10? **106** 28. For the circuit shown, what is the equation for the next state of Q1?

**Q0/Q1** 29. What will this circuit do?

**Divide by 3**

30. If Q1 is 1 and Q0 is 0, what is the next state of Q1 and Q0? **00** 32. In 8 to 1 multiplexer shown, with A=1, B=1, C=1; what would the value of output F be equal to?

**1** 33. 0F in 2’s complement equals (8 bits) \_\_\_\_\_\_ in base 10. **-­‐14** 34. Which gate would be used for the function, F = /AB + A/B? **XOR** 35. For the flip flops in the circuit diagram notice that set and reset are active low. If S1=1, R1=0, S2=1, R2=0, S3=0, R3=1, S4=1, R4=0; what is the output of the counter in hexadecimal?

**2**

36. If S and R are in their inactive state, how many possible states could there be?

**16**  exam2  1. A “PUSH” instruction: **Decrements the SP**  2. If CX is 0000, what will CX be after a “LOOP” instruction? **FFFF**  3. You are trying to rebuild a HELLO program project in MASM and you get the following error: “ERROR 4 line 1”. What is the cause of the error? **Not known-­‐this error by itself isn’t a problem, press the enter key to clear the error** 4. In MASM, with a “MOV CX, 18” instruction, and a “LOOP” instruction, in decimal how many times will the program loop? **18** 5. You are trying to rebuild a HELLO project program in MASM and you get the following error: “LINK : warning L4021: no stack segment”. What would be the reason for such an error? **No project template for COM was selected** 6. In the Hello MASM lab in the original code, what is the address of the byte used to start the string in the sequence “Hello World 0”? **0200** 7. What is 14.4375 base 10 in binary? **001110.01110** 8. How many bit(s) is/are required to represent a range of numbers from 0 to 63? **6**

9. What type of program is this? AX=0000 BX=0000 CX=0000 DX=0000 SP=FFEE BP=0000 SI=0000 DI=0000 DS=1376 ES=1376 SS=1376 CS=1376 IP=0100 NV UP EI PL NZ NA PO NC 1376:0100 0100 ADD [BX+SI],AL DS:0000=CD **COM**  10. What command in DEBUG would be used to change the code segment? **RCS** 11. This section of memory represents a stack. What type of program is this? BEEF:FFD0 00 00 00 00 00 00 00 00-­‐00 00 00 00 00 00 00 00 BEEF:FFE0 00 01 02 03 04 05 06 07-­‐08 09 0A 0B 0C 0D 0E 0F BEEF:FFF0 11 22 33 44 55 66 77 88-­‐99 AA BB CC DD EE FF **COM program**  12. Determine the contents of register BL after the following instructions have been executed:

**E2H** 13. What Hex values must be sent to address the key pad rows on the PPE board? **1, 2, 4, 8** 14. The ASCII codes for space, space, carriage return, line feed, end of string in hexadecimal are: **20, 20, 0D, 0A 24** 15. Which of the following is a valid x86 command for multiplying a number?

**MUL BX**  16. What command in MASM-­‐CODEView would be used to step through a program line by line? **T (F8)** 17. Given the short code, what is the value in AC after the program is run

**0500** 18. A “POP” instruction: **increments the SP** 19. A “NOP” instruction in a program will: **Perform a No Operation** 20. What is the numeric sequence of the key pad columns on the PPE board used in the lab? **37, 2F, 1F**  21. For the instruction sequence below, determine the contents of the register AL after this program is executed:

**62H** 22. Which of the following is not a valid command for a number into a register in MASM? **MOV AX, F8ADH**  23. On the PPE board, what number(s) on the key pad is(are) pressed for an output port value of 04h and an input port value of 2Fh? **8** 24. AND’ing 20H and 1FH will result in which of the following? **0** 25. With a POPA instruction, what will be the order of the accumulator base, count, and data registers restored from the stack? **BDCA**  26. If the SP is F00F, what will the SP value be after a “PUSH CX” instruction? **F00D** The number of nibbles in a double word are: **8**

If you want to use a DOS software interrupt function to print a string out to the screen, what s the function code, start pointer, termination character, and interrupt you need to use? **Ah=09h, ds:dx, “$”,21h** If CS=2DF6h and IP=0BADh, compute the physical address of the next 8086 instruction fetch? **2EB0Dh** The instruction in listing 2 , outputs \_\_\_ consecutive bytes of memory

**500h** Determine the contents of register AL, after following instructions have been executed:

**2EH** Refer to listing 4. What does this code do?

**Outputs bytes from DS:1001 through DS:100F to I/O port 0F010h** If the current values in the stack segment register and stack pointer are EO00h and IA00h respectively, what is the memory address of the top of the stack? **E1A00h**

If CS=2DF6h and IP=0BADh, compute the physical address of the next 8086 instruction fetch. **2EB0Dh** If you want to use a DOS software interrupt function to terminate closing all open files, what is the function code, start pointer, termination character, and interrupt you need to use? **Ah= 4ch, AL error code, none, 21h** The LOOPNE instruction performs which of the following? **Decrements CX, tests the ZF flag, if it is not zero jumps to address specified** Assuming DS=F000h, the instruction sequence in listing 7 below takes the last byte in the transfer from memory at

**F0750h** Which of the following register values within the program loop will cause the program in listing 7 to stop looping? **CX = 1** The instruction MOV CX, [SI] is what addressing mode? **Register Indirect** The IN&OUT instructions can only transfer data between an I/O port and the \_\_\_\_\_ register. **Al, ax, or eax** The 80x86 processors have two general-­‐purpose hardware interrupts called \_\_\_\_\_ and \_\_\_\_\_\_\_\_. Of these, interrupts on \_\_\_\_\_\_\_ can be bloced by giving the \_\_\_\_\_\_\_\_\_ instruction. **INTR, NML, INTR, CLI** What is the binary value of -­‐128? **1000 0000**

What is the status of overflow flag, carry flag, and signal flagm after the following program is run?

**0, 0, 1** In string operations, register \_\_\_\_\_ is used to point to the source operand and register \_\_\_\_ is used to point to the destination operand. **SI, DI** The \_\_\_\_ flag, bit \_\_\_\_ of the register, is used to tell the CPU whether to increment or decrement pointers in repeated string operations. **Directional flag, bit 11** In the following program segment, what condition will cause the REPNZ to fail? **When CX=0 or the point at which DATA1 or DATA2 are not equal** What is the numeric sequence to address the key pad rows on the PPE board used in the lab? **1, 2, 4, 8** When using DOS Debug, which command is used to execute INT instructions (to keep from changing the Code Segment)? **P**

What must the value be and in what register, prior to executing a LOOPNE instruction, to discontinue looping? **CX=1** The ASCII codes for carriage return and line feed are: **0Dh, 0Ah** With a POPA instruction, what will be the order of the registers A-­‐D restored from the stack? **BDCA** What is 9.75 in binary? **1001.1100** What is 0.078125 in short real Floating Point single precision format? **3D A0 00 00** Double-­‐precision IEEE FP standard uses \_\_\_\_\_ bits to represent data. **64** What is the decimal vale of 41 1C 00 00 in IEEE signal precision FP format? **9.75** The number of nibbles in a Double-­‐Precision IEEE FP number are: **16** What are the contents of BL, BH, BX, and EBX after the execution of the instruction, “MOV EBX, 99FF77AAH: **AA, 77, 77AA, 99FF77AA** What are the contents of BX after this program:

**8002h**

Determine the contents of register AL after the following instructions have been executed:

**2EH** With a PUSHA instruction, what will be the order of the register (register A-­‐D) contents on the stack? **ACDB** The numbers of nibbles in a word are: **4** The instruction sequence in the listing, outputs \_\_\_\_\_ consecutive bytes of memory.

**250h** Assuming DS=1000h, the instruction sequence in listing 2 takes the byte in the transfer from memory at: **10250h**

The LOOPNE instruction performs which of the following? **Decrements CX, tests the ZF flag, if it is not zero jumps to address specified** For the instruction sequence below, determine the contents of the register AL after this program is executed:

**10H** The IN & OUT instructions can only transfer data between an I/O port and the \_\_\_\_\_\_ register. **AL, AX, or EAX** TEST#2  1. Determine the contents of the register BL after the following instructions have been executed:

**E2H** 2. What Hex values must be sent to address the key pad rows on the PPE board? **1, 2, 4, 8** 3. With a POP BX instruction, what will be the order of the accumulator, base, count, and data registers restored from the stack? **BX** 4. What is -­‐1011.0101 base 2 in decimal? **-­‐11.31** 5. If CX is 0000, what will CX be after a “LOOP” instruction? **FFFF**

6. How many bit(s) is/are required to represent a range of numbers from 0 to 255? **8** 7. What is 16.4375 base 10 in binary? **010000.01110** 8. In MASM, with a “MOV CX, 12h” instruction, and a “LOOP” instruction, in decimal how many times will the program loop? **18** 9. What is the binary value of decimal 12.875? **1100.1110** 10. What is the numeric sequence of the key pad columns on the PPE board? **37, 2F, 1F** 11. This section of memory represents a stack. What type of program is this? BEEF:0FD0 00 00 00 00 00 00 00 00-­‐00 00 00 00 00 00 00 00 BEEF:0FE0 00 01 02 03 04 05 06 07-­‐08 09 0A 0B 0C 0D 0E 0F BEEF:0FF0 11 22 33 44 55 66 77 88-­‐99 AA BB CC DD EE FF **EXE Program** 12. Given the short code, what is the value in AX after the program is run? **0100** 14. What command in DEBUG would be used to change the IP value? **RIP** 15. What type of program is this? AX=0000 BX=0000 CX=0000 DX=0000 SP=FFEE BP=0000 SI=0000 DI=0000 DS=1476 ES=1576 SS=1676 CS=1376 IP=0015 NV UP EI PL NZ NA PO NC 1376:0015 0100 ADD [BX+SI], AL DS:0000=CD **EXE** 16. What flag(s) does the “LOOPNZ” instruction look at to determine whether to loop or not? **ZF** 17. Which of the following is a valid x86 command for multiplying a number? **MUL BX?** 18. How many bytes are in double precision IEEE floating point format numbers? **8** 19. What is -­‐130 decimal in 2’s complement (8bits)? **01111110**

20. If the SP is F00F, what will the SP value be after a “POP CX” instruction? **F011** 21. What is the decimal value of C5 5A 57 00 in IEEE single precision FP format? **-­‐3493.4375** 22. On the PPE board, what number(s) on the key pad is(are) pressed for an output port value of 04h and an input port value of 2Fh? **8** 23. You are trying to rebuild a HELLO project program in MASM and you get the following error: “LINK : fatal error L1089: HELLO.lrf : cannot open response file”. What would be the reason for such an error? **No source file is identified (no .asm file)**  24. Which of the following will cause a program with a LOOP instruction to loop 48 times? **CX= 30h** 25. If the SP is F00F, what is the SP value after a “PUSH CX” instruction? **F00D** 26. What is(are) the advantage(s) of C language over assembly language? **C is transportable to other microprocessor architectures** 27. The number of bits in single precision IEEE floating point format are: **32** 28. Which of the following is not a valid command for a number into a register in MASM? **MOV AX, F8ADH** 29. In the Hello MASM lab in the original code, what is the address of the byte used to start the string in the sequence “Hello World 0”? **0200** 30. You are trying to rebuild a HELLO project program in MASM and you get the following error: “LINK : warning L4021: no stack segment”. What would be the reason for such an error? **No project template for COM was selected** 31. How many nibbles are in double precision IEEE floating point format numbers? **16** 32. A “pull down” resistor is used in digital circuits to do what? **To keep the signal line “tied” low until the line is active (goes high)**

33. The acronym PWM used for motor control, is defined as which of the following? **Pulse Width Modulation**  midterm2  1. This section of memory represents a stack. What type of program is this? BEEF:FFD0 00 00 00 00 00 00 00 00-­‐00 00 00 00 00 00 00 00 BEEF:FFE0 00 01 02 03 04 05 06 07-­‐08 09 0A 0B 0C 0D 0E 0F BEEF:FFF0 11 22 33 44 55 66 77 88-­‐99 AA BB CC DD EE FF **COM program** 2. The number of bytes in extended precision IEEE floating point format are: **10** 3. With a POP DX instruction, what will be the order of the accumulator, base, count, and data registers restored from the stack? **DX** 4. What flags does the “LOOPNZ” instruction look at to determine whether to loop or not? **ZF** 5. DAS used for BCD operations, stands for which of the following? **Decimal Adjust for Subtraction** 6. Doubule precision IEEE FP standard uses \_\_\_\_\_\_ nibbles to represent data: **16** 7. A “PUSH” instruction: **Decrements the SP**  8. What type of program is this? AX=0000 BX=0000 CX=0000 DX=0000 SP=00EE BP=0000 SI=0000 DI=0000 DS=1076 ES=1B76 SS=1476 CS=1376 IP=0050 NV UP EI PL NZ NA PO NC 1376:0050 0000 ADD [BX+SI],AL DS:0000=CD **EXE** 9. -­‐10.25 in decimal converted to binary would be: **-­‐1010.0100** 10. The “LOOP” instruction is equivalent to which of the following instructions? **DEC CX, JNZ**

11. What is the numeric sequence to address the key pad rows on the PPE board used in the lab? **1, 2, 4, 8** 12. Given the short code, what is the value in AX after the program is run?

0300  13. Which of the following is not a valid command for a number in MASM? **MOV AL, C4H** 14. What is the binary value of decimal 12.875? **1100.1110** 15. If the SP is F00F, what is the SP value after a “POP BX” instruction: **F011** 16. In MASM, with a “MOV CX, 10h” instruction, and a “LOOP” instruction, how many times will the program loop? **16** 17. How many byte(s) is/are required to represent a range of numbers from 0 to 255? **1**

18. Determine the contents of register L after the following instructions have been executed:

**E2H** 19. What are the contents of AL, AH, AX and EAX after the execution of the instruction, “MOV EAX, [30]”? **21, 43, 4321, 87654321** 20. If CX is 0001, what will CX be after a “LOOPNZ” instruction: **0000** 21. With a POPA instruction, what will be the order of the accumulator, base, count, and data registers restored from the stack? **BDCA** 22. The ASCII codes in decimal for space, space, carriage return, line feed, end of string are: **32, 32, 13, 10, 36** 23. You are trying to rebuild a HELLO project program in MASM and you get the following error: “LINK : fatal error L1089: HELLO.lrf : cannot open response file”. What would be the reason for such an error? **No source file is identified (no .asm file)**

24. On the PPE board, what number(s) on the key pad is(are) pressed for an output port value of 01h and an input port value of 1Fh? **3**  25. For the instruction sequence below, determine the contents of the register AL after this program is executed:

**28H** 1. In string operations, register SI is used to point to the ource operand and register DI is used to point to the destination operand. **SI, DI** 2. What type of program is this? AX=0000 BX=0000 CX=0000 DX=0000 SP=00EE BP=0000 SI=0000 DI=0000 DS=1076 ES=1B76 SS=1476 CS=1376 IP=0115 NV UP EI PL NZ NA PO NC 1376:0115 0000 ADD [BX+SI], AL **EXE** 3. A “POPA” instruction: **Increments the SP** 4. What flag(s) does the “LOOPNE” instruction look at to determine whether to loop or not? **ZF** 5. Double precision IEEE FP standard uses \_\_\_\_\_ nibbles to represent data. **16** 6. The “LOOPNE” instruction is equivalent to which of the following instructions? **DEC, CX, JNE/JNZ** 7. If the SP is F00F, what is the SP value after a “POP BX” instruction? **F011**

8. The ASCII codes for space, space, carriage return, line feed, end of string in decimal are: **32, 32, 13, 10, 36** 9. How many bit(s) is/are required to represent a range of numbers from 0 to 255? **8** 10. In MASM, with a “MOV CX, 18h” instruction, and a “LOOP” instruction, in decimal how many times with the program loop? **24** 11. The number of bytes in extended precision IEEE floating point format are: **10** 12. If CX is 000, what will CX be after a “LOOP” instruction? **0001** 13. ANDing 2FH and 10H will result in which of the following? **0** 14. With a POPAX instruction, what will be the order of the accumulator, base, count, and data registers restored from the stack? **AX** 15. What is the numeric sequence to address the key pad rows on the PPE board used in the lab? **1, 2, 4, 8**  16. DAS used for BCD operations, stands for which of the following? **Decimal Adjust for Subtraction** 17. What are the contents of AL, AH, AX, and EAX after the execution of the instruction, “MOV EAX, 12345678H”? **78, 56, 5678, 12345678** 18. -­‐11.25 in decimal converted to binary would be: **-­‐1011.0100** 19. On the PPE board, what number(s) on the key pad is(are) pressed for an output port value of 04h and an input port value of 2Fh? **8** 20. What command in DEBUG would be used to execute interrupts? **P**

21. For the instruction sequence below, determine the contents of the register AL after this program is executed?

**28H** 22. What is 31.4375 base 10 in binary? **011111.0111** 23. Determine the contents of register BL after the following instructions have been executed:

**E2H** 24. This section of memory represents a stack. What type of program is this? BEEF:05D0 00 00 00 00 00 00 00 00-­‐00 00 00 00 00 00 00 00 BEEF:05E0 00 01 02 03 04 05 06 07-­‐08 09 0A 0B 0C 0D 0E 0F BEEF:05F0 11 22 33 44 55 66 77 88-­‐99 AA BB CC DD EE FF **EXE program** 25. Using DEBUG, which command should be used to change the flag settings? **RF** 26. You are trying to rebuild a HELLP project in MASM and you get the following error: “LINK :fatal error L1089: HELLO.lrf : cannot open response file”. **No source file is identified (no .asm file)**

1. Using DEBUG, which command should be used to change the flag settings? **RF** 2. ANDing 20H and 1F will result in which of the following? **0** 3. In MASM, with a “MOV CX, 12h” instruction, and a “LOOP” instruction, in decimal how many times will the program loop? **18** 4. What is the numeric sequence to address the keypad rows on the PPE board used in the lab? **1, 2, 4, 8** 5. What is 14.4375 base 10 in binary? **001110.01110** 6. If the SP is F00F, what will the SP value be after a “POP CX” instruction? **F011** 8. How many double words are in double precision IEEE floating point format numbers? **2** 9. How many bit(s) is/are required to represent a range of numbers from 0 to 255? **8** 10. A “NOP” instruction in a program will: **Perform a No Operation** 11. You are trying to rebuild a HELLP project program in MASM and you get the following error: “LINK : warning L4021: no stack segment”. What would be the reason for such an error? **No project template for COM was selected** 12. A “PUSH” instruction: **Decrements the SP** 13. I CX is 0000, what will CX be after a “LOOP” instruction? **FFFF** 14. On the PPE board, what number(s) on the key pad is(are) pressed for an output port value of 02h and an input port value for 2Fh? **5**

15. With a POPAX instruction, what will be the order of the accumulator, base, count, and data registers restored from the stack? **AX** 17. Determine the contents of registers BL after the following instructions ave beenexecuted:

**E2H** 18. What is -­‐1011.0101 base 2 in decimal? **-­‐11.31** 19. Given the short code, what is the value in AX after the program is run?

**0500**

20. For the instruction sequence below, determine the contents of the register AL after this program is executed:

**50H** 21. Which of the following is not a valid command for a number into a register in MASM? **MOV AX, AADH** 22. The number of bits in single precision IEEE floating point format are: **80** 23. What is the numeric sequence of the key pad columns on the PPE board used in the lab? **37, 2F, 1F** 24. What command in DEBUG would be used to execute interrupts? **P** 25. Which of the following is a valid x86 command for multiplying a number? **MUL, BX** 1. Determine the contents of register BL after the following instructions have been executed:

**E2H** 2. What Hex values must be sent to address the key pad rows on the PPE board? **1, 2, 4, 8**

3. With a POP BX instruction, what will be the order of the accumulator, base, count, and data registers restored from the stack? **BX** 4. What is -­‐1011.0101 base 2 in decimal? **-­‐11.31** 5. If CX is 0000, what will CX be after a “LOOP” instruction? **FFFF** 6. How many bit(s) is/are required to represent a range of numbers from 0 to 256? **8** 7. What is 16.4375 base 10 in binary? **010000.01110** 8. In MASM, with a “MOV CX, 12h” instruction, and a “LOOP” instruction, in decimal how many times will the program loop? **18** 9. What is the binary value of decimal 12.875? **1100.1110** 10. What is the numeric sequence of the key pad columns on the PPE board? **37, 2F, 1F** 12. Given the short code, what is the value in AX after the program is run?

**0100** 13. -­‐32.75 base 10 in binary? **-­‐100000.11000** 14. What command in DEBUG would be used to change the IP value? **RIP**

16. What flag(s) does the “LOOPNZ” instruction look at to determine whether to loop or not? **ZF** 19. What is -­‐130 decimal in 2’s compliment (8bits)? **01111110** 20. If the SP is F00F, what will the SP value be after a “POP CX” instruction? **F00D** 22. On the PPE board, what number(s) on the key pad is(Are) pressed for an output port value of 04h and an input port value of 2Fh? **8** 24. Which of the following will cause a program with a LOOP instruction to loop 48 times? **CX=30h** 25. If the SP is F00F, what is the SP value after a “PUSH CX” instruction? **F011** 27. The number of bits in single precision IEEE floating point format are: **32** 29. In the Hello MASM lab in the original code, what is the address of the byte used to start the string in the sequence “Hello World 0”? **0200** 31. How many nibbles are in double precision IEEE floating point format numbers? **16**