

1010 0110 in 2's complement equals in base 10 → -90

A microprocessor with a 32-bit address bus could access how much memory → 4GB

A6 in 2's complement equals in base 10 → -90

A "POP" instruction: → Increments the SP

A "PUSH" instruction → decrements the SP

A "NOP" instruction in a program will → Perform a No Operation

AND'ing 1FH and 02H will result in which of the following → 02

AND'ing 10H and 2FH will result in which of the following → 0

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)

A "pull up" resistor is used in digital circuits to do what → To keep singal "tied" high until the line is active (goes low)

Determine the contents of register BL after the following instructions have been executed: → E2H

MOV BL, E2H

MOV CL, 1000b

ROL BL, CL ; rotate BL by 8 to left = same value

For the instruction sequence below, determine the contents of the registers AL after this program → 51H

MOV AL, 73h ; 0111 0011

ADD AL, 78h ; 0111 1000

DAA

if low nibble of AL > 9 or AF = 1 then:

AL = **AL + 6**

AF = 1

if AL > 9Fh or CF = 1 then:

AL = **AL + 60h**

CF = 1

For the instruction sequence below, determine the contents of the register AL after this program is executed → 51H

MOV AL, 83h

ADD, AL, 68h

DAA

Given the short code, what is the value in AX after the program is run → 0100

Mov BX, 0100

PUSH BX

MOV AX, 0500

POP AX

Given the short code, what is the value in AX after the program is run → 0001

MOV BX, 0001

PUSH BX

MOV AX, 0500

POP AX

GIVEN: IP = 0106 Flags: NV UP EI NG NZ NA PE NC Instruction: JMP 011F
What will the IP value be after “t” command is executed in DOS Debug? → 011FH (Unconditional Jump)

GIVEN: IP = 0109 Flags: OV UP EI PL NZ NA PO CY Instruction: JGE 0118
What will the IP value be after a “t” command is executed in DOS Debug → **010B**
(0109 + 0010 add two bytes)

GIVEN: IP=FFE0 Flags: OV UP EI PL NZ NA PO NC Instruction: JGE 0116: ID72:010D **7D09**
How many bytes will the processor jump if the condition for a jump were met? → 9

GIVEN: AX= FFF0 IP = 0109 FALGS: OV UP EI PL NZ NA PO CY ID72: 010F **7D18** Instruction: JGE 0118.
What is the signed decimal value of the number in the AX register? → -16
Convert the number 7D18 into decimal.

GIVEN: IP= 010F Flags: NV UP EI NG NZ NA PO NC Instruction: JNL 0115.
How many bytes in decimal will the processor jump if the conditions for a jump were met → 24

GIVEN: 57 65 6C 63 6F 6D 65 20-74 6F 20 41 73 73 65 6D
62 6C 79 20 4C 61 6E 67-75 61 67 65 00 00 00 00
An ASCII message begins at memory location 0200, what is the message? → Welcome to Assembly Language

Here is a short sequence of code: 7413 EBA3 CD16 7D21 3C04 EBF0 EB15. All of the instructions are a word long. The third instruction operator is → INT

Here is a short sequence of code: 7413 A3EB CD16 7D21 3C04 EBF0 EB15. All of the instructions are a word long. The fourth instruction operator is → JGE

Here is a short sequence of code: B400 CD16 3C4A 7404 BC6A 7513. All of the instructions are two bytes long. The sixth instruction operator is → JNZ

How many cores does the propeller microcontroller have → 8

How many bits(s) is/are required to represent a range of decimal numbers from 0 to 15 → 4

How many bits(s) is/are required to represent a range of decimal numbers from 0 to 63 → 6

How many bits(s) is/are required to represent a range of decimal numbers from 0 to 127 → 7

How many bits(s) is/are required to represent a range of decimal numbers from 0 to 255 → 8

How many bytes are there in this short sequence of code B4 00 CD 16 4C CD 20 → 7

How many nibbles are there in this short sequence of code B4 00 CD 16 3C 4A 74 04 3C 6A 75 13 → 24

How many bytes are in double precision IEEE floating point format numbers → 8

How many nibbles are in double precision IEEE floating point format numbers → 16

How many address lines would be required to address 128 MB directly → 27 ($128 \times 1048576 = 134217728$ and $2^{27} = 134217728$)

How many address lines would be required to address 64 MB directly → **26** ($64 \times 1048576 = 67108864$ and $2^{26} = 67108864$)

If CX is 0000, what will CX be after a “LOOP” instruction → **FFFF**

If CX is 0003, what will CX be after a “LOOPNZ” instruction → **0002**

If the SP is **F00F**, what is the SP value after a “**PUSH CX**” instruction → **F00D**

If the SP is **F00F**, what is the SP value after a “**POP CX**” instruction → **F011**

If the SP is **F00F**, what is the SP value after a “**POP SP**” instruction → **F011**

In adding 5+5 through a 4 bit integer unit. The state of the OF and CF flags after the add instruction would be → **OF = 1, CF = 0**

In x86 architecture, BIU stands for which of the following → **Bus Interface Unit**

In x86 architecture, ALU stands for which of the following → **Arithmetic Logic Unit**

In the x86 lab part 3 Hello MASM program in the original code, what is the address of the byte used to start the number in the sequence “Hello World 0”? → **020E**

In MASM, with a “MOV CX, **24h**” instruction, and a “LOOP” instruction, how many times will the program loop in decimal → **36**

In MASM, with a “MOV CX, **24**” instruction, and a “LOOP” instruction, how many times will the program loop in decimal → **24**

In MASM, with a “MOV CX, **12h**” instruction, and a “LOOP” instruction, how many times will the program loop in decimal → **18**

In the Hello MASM lab in the original code, what is the address of the string to start the message “Hello World 0” → **0200**

In the PIC18 with TRISD = 0b10000000, what is the configuration of the Port D → **Bit 7 of port D is set to input**

In the PIC18 with TRISD = 0b01111111 and LATD = 0xAA, what value will be on Port D and shown on the LEDs → **Bit 7 of port D is set to Output** (because the first bit is zero = output)

In the PIC18 with TRISD = 0b00001111, what is the configuration of the Port D → **A0 (First 4 are outputs and last four are inputs)**

In the PIC18 with TRISD = 0b11110000 and LATD = 0xAA, what value will be on Port D and shown on the LEDs → **0A**

In the Propeller microcontroller, the command “dira[9..4] := %000000” would cause the processor to do which of the following → **Sets the propeller pin P4 through P9 as output pins**

In the Propeller microcontroller, the command “dira[9..4] := %111111” would cause the processor to do which of the following → **Sets the propeller pin P4 through P9 as output pins**

In the propeller microcontroller, the command “waitcnt(clkfreq*3 + cnt)” would cause the processor to do which of the following → A 3 second delay

In the propeller microcontroller, the command “waitcnt(clkfreq*2 + cnt)” would cause the processor to do which of the following → A 2 second delay

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.

Int 10h uses what function code to write a character to the screen and advance the cursor by one character position → 0Eh

Int 21h, Function 09h requires three things set up before calling in order to correctly print a string:
DS=SEG Hello_msg, DX=OFFSET Hello_msg, Hello_msg terminated with 24h.

Ladder Logic is used in? → PLCs

Moore's law has accurately predicted the growth rate in the number of transistors per die for the last 40 years. What is the rate? → Doubling every 18-24 months

On the Arduino platform what is the program language used → C

On the **PPE board**, what numbers(s) on the key pad is(are) pressed for an output port value of 08h and an input port value of 2Fh → 0

On the **PPE board**, what numbers(s) on the key pad is(are) pressed for an output port value of 04h and an input port value of 2Fh → 8

The “LOOPNZ” instruction is equivalent to which of the following instructions → DEC CX, JNE

The acronym PWM used for motor control, is defined as which of the following → Pulse Width Modulation

The acronym PLC, is defined as which of the following? → Programmable Logic Controller

The ASCII codes for space, space, carriage return, line feed, end of string in **decimal** are → 32, 32, 13,10, 36

The ASCII codes for space, space, carriage return, line feed, end of string in **hexadecimal** are: → 20,20,0D,0A,24

The binary number, 1011 0101, represents what values as a unsigned binary, 8 bit signed binary, odd parity ASCII, and BCD number (in that order) → 181, -76, 5, invalid5

The instruction MOV CX, DADD is what addressing mode → Immediate

The instruction MOV CX, [DADD] is what addressing mode → Direct

The number of bits in single precision IEEE floating pint format are → 32

This section of memory represents a stack. What type of program is this → **EXE PROGRAM**

BEEF:00D0 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00 00
BEEF:00E0 00 01 02 03 04 05 06 07-08 09 0A 0B 0C 0D 0E 0F
BEEF:00F0 11 22 33 44 55 66 77 88-99 AA BB CC DD EE FF

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

This section of memory represents a stack. What type of program is this → **COM PROGRAM**

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

Using MASM, which of the following will cause a program with a LOOP instruction to loop 48 times in decimal → **MOV CX, 48**

Which command would you use to execute another core in the propeller microcontroller → **Cognew**

What command in DEBUG would be used to change the code segment → **RCS**

What command in DEBUG would be used to change the IP value → **RIP**

What command in DEBUG would be used to execute interrupts → **P**

What command in MASM-CodeView would be used to step through a program line by line → **T(F8)**

What flag(s) does the “LOOPNZ” instruction look at to determine whether to loop or not → **ZF**

What flag(s) does the “LOOPNE” instruction look at to determine whether to loop or not → **ZF**

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

What is the advantage of C Language over Assembly Language → **C is transportable to other microprocessor architectures**

What is the hexadecimal encoding for “JGE” for a jump back 10 bytes → **7DF4 (10 byes + 2)**

What is the hexadecimal encoding for adding AX with BX and storing the result in AX → **01D8**
ADD AX, BX 000 00W 11 reg1 reg2

What is the hexadecimal encoding for adding BX with CX and storing the result in BX → **01CB**

What is the hexadecimal encoding for adding BX with DX and storing the result in BX → **01D3**

What is -130 decimal in 2's complement (8bits) → **01111110**

What is -32.75 in a base two number system → **-100000.110000**

What is 14.4375 in binary → **001110.0110**

What is 16.4375 in binary → **010000.01110**

What is the binary value of decimal 12.875 → **1100.1110**

What is 16.4375 in binary → **010000.01110**

What is number, 1011.0101 (2) in decimal? → **11.31**

What is the **numeric sequence** of the key pad columns on the PPE board → **37,2F,1F**

What is the decimal value of C5 5A 57 00 in IEEE single precision FP format → **-3493.4375**

What of the following instruction would be used to set the LED to light on the Arduino platform → **digitalWrite(ledPin, HIGH);**

What type of program is this → **EXE**

IP = **0115**, 1376:0115 0100 ADD [BX+SI], AL DS:0000=CD

What type of program is this → **COM**

IP = 0100, 1376:0100 0100 ADD [BX+SI], AL DS:0000=CD

Which of the following DOS Debug instructions would set a break point at memory location 010C → **G = 100 10C**

Which of the following would be used to set the **TRISA** register to control the direction of **PIC18** port to **input** → **1** and for **output** its → **0**

Which of the following DOS Debug instructions would be used to change the IP register to 110 → **RAX = 0110**

Which of the following will cause a program with a LOOP instruction to loop 48 times (decimal) → **CX=30h**

Which of the following is a valid x86 command for multiplying a number → **MUL BX**

Which of the following is **not a valid** command for a number into a register in MASM → **MOV AX, BADH**

With a POP BX instruction, what will be order off the accumulator, base, count, and data registers restored from the stack → **BX**

With a POPA instruction, what will be the order of the accumulator, base, count, and data registers restored from the stack → **BDCA**

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.**

You are typing to rebuild a HELLO project program in MASM and you get the following error: "LINK : warring L4021: no stack segment". What would be the reason for the such an error → **No project template for COM was selected.**

You are typing 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 the such an error → **No source file is identified(no .asm file)**

PPE Row Column Scan decoding

D7 D6 D5 D4 D3 D2 D1 D0

S7 S6 S5 S4 S3 S2

^ ^ ^

3 2 1

0 0 0 0 1 0 0 0 = 08h

0 0 0 1 0 0 0 0 = 10h

0 0 1 0 0 0 0 0 = 20h

0 0 1 1 1 1 1 1 = 3Fh -> Nothing pressed

0 0 1 1 0 1 1 1 = 37h -> Number 1 pressed

0 0 1 0 1 1 1 1 = 2Fh -> Number 2 pressed

0 0 0 1 1 1 1 1 = 1Fh -> Number 3 pressed

Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char
0	00	Null	32	20	Space	64	40	Ø	96	60	`
1	01	Start of heading	33	21	!	65	41	A	97	61	a
2	02	Start of text	34	22	"	66	42	B	98	62	b
3	03	End of text	35	23	#	67	43	C	99	63	c
4	04	End of transmit	36	24	\$	68	44	D	100	64	d
5	05	Enquiry	37	25	%	69	45	E	101	65	e
6	06	Acknowledge	38	26	&	70	46	F	102	66	f
7	07	Audible bell	39	27	'	71	47	G	103	67	g
8	08	Backspace	40	28	(72	48	H	104	68	h
9	09	Horizontal tab	41	29)	73	49	I	105	69	i
10	0A	Line feed	42	2A	*	74	4A	J	106	6A	j
11	0B	Vertical tab	43	2B	+	75	4B	K	107	6B	k
12	0C	Form feed	44	2C	,	76	4C	L	108	6C	l
13	0D	Carriage return	45	2D	-	77	4D	M	109	6D	m
14	0E	Shift out	46	2E	.	78	4E	N	110	6E	n
15	0F	Shift in	47	2F	/	79	4F	O	111	6F	o
16	10	Data link escape	48	30	0	80	50	P	112	70	p
17	11	Device control 1	49	31	1	81	51	Q	113	71	q
18	12	Device control 2	50	32	2	82	52	R	114	72	r
19	13	Device control 3	51	33	3	83	53	S	115	73	s
20	14	Device control 4	52	34	4	84	54	T	116	74	t
21	15	Neg. acknowledge	53	35	5	85	55	U	117	75	u
22	16	Synchronous idle	54	36	6	86	56	V	118	76	v
23	17	End trans. block	55	37	7	87	57	W	119	77	w
24	18	Cancel	56	38	8	88	58	X	120	78	x
25	19	End of medium	57	39	9	89	59	Y	121	79	y
26	1A	Substitution	58	3A	:	90	5A	Z	122	7A	z
27	1B	Escape	59	3B	;	91	5B	[123	7B	{
28	1C	File separator	60	3C	<	92	5C	\	124	7C	
29	1D	Group separator	61	3D	=	93	5D]	125	7D	}
30	1E	Record separator	62	3E	>	94	5E	^	126	7E	~
31	1F	Unit separator	63	3F	?	95	5F	_	127	7F	□

1. Given

AX=FFF0 BX=3534 CX=0000 DX=0180 SP=FFEE BP=0000 SI=0000 DI=0000
DS=1D72 ES=1D72 SS=1D72 CS=1D72 IP=0109 OV UP EI PL NZ NA PO CY
1D72:0109 7D06 JNL 0118

What is the signed decimal value of the number in the AX register?

-16

3. What is 16.4375 base 10 in binary?

010000.01110

4. Here is a short sequence o code: 7413A3EBCD167D213C04EBF0EB15. All of the instructions are a word long. The forth instruction operator is:

JGE

7. The “LOOPNZ” instruction is equivalent to which of the following instructions?

DEC CX, JNE

8. Given AX=FFE0 BX=3534 CX=0000 DX=0180 SP=FFEE BP=0000 SI=0000
DI=0000 DS=1D72 ES=1D72 SS=1D72 CS=1D72 IP=010D OV UP EI PL NZ NA PO NC

How many bytes will the processor jump if the conditions for a jump were met?

9

9. Given: AX=0353 BX=0534 CX=0000 DX=0180 SP=FFEE BP=0000 SI=0000
DI=0000 DS=1D72 ES=1D72 SS=1D72 CS=1D72 IP=0109 OV UP EI PL NZ NA PO CY
What will the IP value be after a “t” command is executed in DOS Debug?

010B

13. Given: AX=2247 BX=0000 CX=0000 DX=0000 SP=FFEE BP=0000 SI=0000
DI=0000 DS=1D72 ES=1D72 SS=1D72 CS=1D72 IP=0106 NV UP EI NG NZ NA PE NC
1D72:0106 EBOF JMP 0118

What will the ip value be after a “t” command is executed in DOS Debug?

0118h

15. What is the hexadecimal encoding for adding BX with CX and storing thee result in BX?

01CB

19. If CX is 0002 what will CX be after a “LOOP” instruction?

0001

20. In x86 architecture, ALU stands for which of the following?

Arithmetic Logic Unit

23. What is the hexadecimal encoding for “JGE” for a jump back 12 bytes?
7DF2

24. Moore’s law has accurately predicted the growth rate in the number of transistors per die for the last 40 years. What is that rate?
Doubling every 18-24 months

25. AND’ing 10H and 2FH will result in which of the following?
0

32. What command in DEBUG would be used to execute interrupts?
P

The number of nibbles in a double word are:
8

F2011

1. Given:

0B0E:0200 57 65 6C 63 6F 6D 65 20-74 6F 20 74 68 65 20 66
0B0E:0210 69 72 73 74 20 64 61 79-20 6F 66 20 74 68 65 20
0B0E:0220 72 65 73 74 20 6F 66 20-79 6F 75 72 20 6C 69 66
0B0E:0230 65 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00 00 00

An ASCII message begins at memory location 0200, what is the message?
Welcome to the first day of the rest of your life

2. The instruction MOV DX, BADD is what addressing mode?
Immediate

3. Which of the following is the hexadecimal encoding for adding BX with CX and storing the result in CX?
03CB

4. What is the advantage of Assembly Language over C language?
The assembler creates much faster executable code

5. What is 18.4375 base 10 in binary?
010010.01110

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

Program Listing
MOV AL, 75h
ADD AL, 76h
DAA

51H

7. In x86 architecture, ALU stands for which of the following?

Arithmetic Logic Unit

8. A microprocessor with a 33-bit address bus could access how much memory?

8 GB

9. What is the hexadecimal encoding for “JGE” for a jump back 12 bytes?

7DF2

10. Given:

AX=FFE0 BX=3534 CX=0000 DX=0180 SP=FFEE BP=0000 SI=0000 DI=0000

DS=1D72 ES=1D72 SS=1D72 CS=1D72 IP=010F NV UP EI NG NZ NA PO NC

1D72:010F 7d18 JGE 0128

How many bytes in decimal will the processor jump if the conditions for a jump are met?

24

11. Moore's law has accurately predicted the growth rate in the number of transistors per fie for the last 40 years. What is that rate?

Doubling every 18-24 months

12. The number of bytes in a word are

2

13. Determine the contents of register BL after the following instructions have been executed

Program Listing

MOV BL, E2H

MOV CL, 0100b

ROL BL, CL

2EH

14. How many bit(s) is/are required to represent a range of decimal numbers from 0 to 127?

7

15. What high level language is the propeller programmed in?

Spin

16. In the propeller microcontroller, the command “dira[4..9] := %0000000” would cause the processor to do which of the following?

Sets the propeller pins P4 through P9 as input pins

17. Which command would you use to execute another core in the propeller microcontroller?

Cognew

18. How many cores does the propeller microcontroller have?

8

19. In the propeller microcontroller, the command “waitcnt(clkfreq^10 + cnt)” would cause the processor to do which of the following?

Create 10 second delay

20. The Acronym ADC in microcontrollers stands for which of the following?

Analog to Digital Converter

21. The acronym PWM used in the parallax propeller and microchip pic18, is defined as:

Pulse width modulation

22. How many bits does the PIC18 microcontroller used in the pickit 3 debug express have?

8

23. Which of the following would be used to set the TRISA register to control the direction of the pic18 port to input?

1

24. In the pic18 with trisd = 0b01111111, what is the configuration of the port d?

Bit 7 of port d is set to output

25. In the pic18 with trisd = 0b11110000 and latd = 0xAA, what value will be on port d and shown on the leds?

0A

26. On the arduino platform, what is the programming language used?

C

27. Given:

AX=FFD0 BX=3534 CX=0000 DX-=0180 SP=FFEE BP=0000 SI=0000 DI=0000
DS=1D72 ES=1D72 SS=1D72 CS=1D72 IP=0111 NV UP EI NG NZ NA PO CY
1D72:0111 EB08 JMP 0119

What will the IP value be after a “t” command is executed in DOS Debug?
0119h

28. How many bytes are there in this short sequence of code?

B400CD164CCD21CD20
9

29. In x86 architecture, BIU stands for which of the following?

Bus interface unit

30. Here is a short sequence of code: 7413EBA3CD167D213C04EBF0EB15. All of the instructions are a word long. The fifth instruction operator is:

CMP

31. The ASCII codes for space, space, carriage return, line feed, end of string in decimal are:

32, 32, 13, 10, 36

32. A “NOP” instruction in a program will:

Perform a no operation

33. Given:

AX=FFF0 BX=3534 CX=0000 DX=0180 SP=FFEE BP=0000 SI=0000 DI=0000
DS=1D72 ES=1D72 SS=1D72 CS=1D72 IP=0109 OV UP EI PL NZ Na PO CY
1D72:0109 7D06 JNL 0118

What is the signed decimal value of the number in the AX register?

-16

34. Which of the following DOS Debug instructions would set a break point at memory location 010C?

G= 100 10C

35. In adding 5+7 through a 4 bit integer unit, the state of the OF and CF flags after the add instruction would be:

OF=01 CF=0

36. Given:

AX=FFD0 BX=3534 CX=0000 DX=0180 SP=FFEE BP=0000 SI=0000 DI=0000
DS=1D72 ES=1D72 SS=1D72 CS=1D72 IP=00D OV UP EI NG ZR NA PO NC
1D72:010D 7509 JNZ 0116

What will the IP value be after a “t” command is executed in DOS Debug?
010Fh

37. What are the contents of DX after this program has been run:

	Memory Location	Contents
MOV DX, 11h	5514	24
MOV CX, [5512]	5513	D8
MOV BX, 5511h	5512	00
SUB DX, [BX]	5511	21
AND BX, FFFF	5510	00

FFF0h

38. Which of the following DOS Debug instructions would be used to change the IP register to 010C?

RIP

39. What is the number, 1010.0101 base 2 in decimal?

10.31

40. What command in DEBUG would be used to step through a program line by line?

T

41. AND'ing 1Fh and 02H will result in which of the following?

02

42. How many address lines would be required to address 64 MB directly?

26

S2012

1. What is the advantage of Assembly language over C language?

The assembler creates much faster executable code

2. How many address lines would be required to address 128 MB directly?

27

3. In the x86 lab part 3 Hello MASM program in the original code, what is the address of the byte used to start the number in the sequence “Hello World 0”?
020E

4. Given:

0B0E:0200 57 65 6C 63 6F 6D 65 20-74 6F 20 41 73 73 65 6D
0B0E:0210 62 6C 79 20 4C 61 6E 67-75 61 67 65 00 00 00 00

An ASCII message begins at the memory location 0200, what is the message?
Welcome to Assembly Language

5. Which of the following DOS Debug instructions would be used to change the IP register to 0110?

RIP

6. Moore’s law has accurately predicted the growth rate in the number of transistors per die for the last 40 years. What is that rate?

Doubling every 18-24 months

7. Which of the following DOS Debug instructions would set a break point at memory location 010C?

G = 100 10C

8. AND’ing 1FH and 02H will result in which of the following?

02

9. If CX is 0000 what will CX be after a “LOOP” instruction?

FFFF

10. The number of bits in a word are:

16

11. In 86 architecture, ALU stands for which of the following?

Arithmetic Logic Unit

12. Given

AX=0353 BX=0534 CX=0000 DX=0180 SP=FFEE BP=0000 SI=0000 DI=0000
DS=1D72 ES=1D72 SS=1D72 CS=1D72 IP=0109 OV UP EI PL NZ NA PO CY
1D72:0109 7D06 JGE 0118

What will the IP value be after a “t” command is executed in DOS Debug?

010B

13. What is the number, 1010.0101 base 2 in decimal?

10.31

14. How many cores does the propeller microcontroller have?

8

15. What is the hexadecimal encoding for "JGE" for a jump back 12 bytes?

7DF2

16. What command in DEBUG would be used to step through a program line by line?

T

17. Here is a short sequence of code: 7413EBA3CD167D213C0\$EBF0EB15. All of the instructions are a word long. The third instruction operator is:

INT

18. In MASM, with a "MOV CX, 24" instruction, and a "LOOP" instruction, in decimal how many times will the program loop?

24

19. Given:

Ax=FFE0 BX=3534 CX=0000 DX=0180 SP=FFEE BP=0000 SI=0000 DI=0000
DS=1D72 ES=1D72 SS=1D72 CS=1D72 IP=010D NV UP EI PL NZ NA PO NC
1D72:010D 7DF6 JNL 0116

How many bytes in decimal will the processor jump if the conditions for a jump were met?

-10

20. Determine the contents of registers BL after the following instructions have been executed:

Program Listing

MOV BL, E2H

MOV CL, 08H

ROL BL, CL

E2H

21. The ASCII Codes for space, space, carriage return, line feed, end of string decimal are:

32, 32, 13, 10, 36

22. AND'ing 10H and 2FH will result in which of the following?

a. 0

23. A “NOP” instruction in a program will:

Perform a no operation

24. Given:

AX=FFF0 BX=3534 CX=0000 DX=0180 SP=FFEE BP=0000 SI=0000 DI=0000

DS=1D72 ES=1D72 SS=1D72 CS=1D72 IP=0109 OV UP EI PL NZ NA PO CY

1D72:0109 7D06 JGE 0118

What is the signed decimal value of the number in the AX register?

-16

25. How many address lines would be required to address 64 MB directly?

26

26. What command in DEBUG would be used to execute interrupts?

P

27. What high level assembly language is the propeller programmed in?

spin

28. Which of the following DOS Debug instructions would be used to change the IP register to 010C?

RIP

29. The acronym PWM used in the parallax propeller and microchip pic18, is defined as:

Pulse width modulation

30. Which command would you use to execute another core in the propeller microcontroller?

Cognew

31. Given:

AX=FFD0 BX=3534 CX=0000 DX=0180 SP=FFEE BP=0000 SI=0000 DI=0000

DS=1D72 ES=1D72 SS=1D72 CS=1D72 IP=0111 NV UP EI NG NZ NA PO CY

1D72:0111 EB08 JMP 0119

What will the IP value be after a “t” command is executed in DOS Debug?

0119h

32. The instruction MOV CX, DADD is what addressing mode?

Immediate

33. In the pic18 with trisd = 0b00001111 and latd = 0xAA, what value will be on Port D and shown on the LEDs?

A0

34. Given:

AX=FFE0 BX=3534 CX=0000 DX=0180 SP=FFEE BP=0000 SI=0000 DI=0000
DS=1D72 ES=1D72 SS=1D72 CS=1D72 IP=010F NV UP EI NG NZ NA PO NC

How many bytes in decimal will the processor jump if the conditions for a jump are met?

24

35. In the propeller microcontroller, the command “dira[4..9] : %111111” would cause the processor to do which of the following?

Sets the Propeller pins P4 through P9 as output pins

36. What are the contents of DX after this program has been run:

MOV DX, 11h
MOV CX, [5512]
MOV BX, 5511h
SUB DX, [BX]
AND BX, FFFF

Memory Location	Contents
5514	24
5513	D8
5512	00
5511	21
5510	00

FFF0h

37. The number of nibbles in a word are:

4

38. In the propeller microcontroller, the command “waitcnt(clkfreq*10 + cnt)” would cause the processor to do which of the following?

Create 10 second delay

39. The “LOOPNE” instruction is equivalent to which of the following instructions?

DEC CX, JNE

40. Given:

AX=FFE0 BX=3534 CX=0000 DX=0180 SP=FFEE BP=0000 SI=0000 DI=0000
DS=1D72 ES=1D72 SS=1D72 CS=1D72 IP=010D NV UP EI NG NZ NA PO NC
1D72:010D EB07 JMP 0114

How many bytes will the processor jump if the conditions for a jump were met?

7

41. On the Arduino platform, what is the programming language used?

C

42. What is the hexadecimal encoding for loading AX with a word (value) from memory location 0820h?

A12008

43. Which of the following would be used to set the trisa register to control the direction of the pic18 port to input?

1

44. The acronym ADC in microcontrollers stands for which of the following?

Analog to Digital Converter

45. In adding 5+5 through a 4 bit integer unit. The state of the OF and CF flags after the add instruction would be

OF=1 CF=0

S2007

1. Given:

AX=FFD0 BX=3534 CX=0000 DX=0190 SP=FFEE BP=0000 SI=0000 DI=0000
DS=1D72 ES=1D72 SS=1D72 CS=1D72 IP=010E OV UP EI PL NZ NA PO CY
1D72:0109 7D06 JNL 0118

What will the IP value be after a "t" command is executed in DOS Debug?

0110

2. The instruction MOV BX, 2BAD is what addressing mode?

Immediate

3. What is the hexadecimal encoding for "JNL" for a jump back 10 bytes?

7DF4 if that's not there try 7DF6

4. How many address lines would be required to address 64 MB directly?

26

5. The number of nibbles in a double word are:

8

7. Int 21h, Function 09h requires three things set up before calling in order to correctly print a string, Hello_msg. They are:

DS = SEG Hello_msg, DX = OFFSET Hello_msg, Hello_msg terminated with 24h

21. What are the contents of DX after this program has been run:

10

```
MOV DX, 11h  
MOV CX, [5512]  
MOV BX, 5511h  
SUB DX, [BX]
```

Memory Location	Contents
5514	24
5513	D8
5512	00
5511	21

FFF0h

22. In using INT 10h to move the screen cursor to return on the same line, what value must be in the AX register?

23. Given:

AX=FFD0 BX=3534 CX=0000 DX=0180 SP=FFEE BP=0000 SI=0000 DI=0000
DS=1D72 ES=1D72 SS=1D72 CS=1D72 IP=010D OV UP EI PL NZ NA PO NC
1D72:010D 7D09 JNLE 0118

What will the IP value be after a "t" command is executed in DOS Debug?
010Fh

24. Which of the following DOS Debug instructions would be used change the AX register?

RAX

25. How many bytes are there in this short sequence of
codeB815B400CD168A3CCD20

10

S2006

1. Given:

AX=FFF0 BX=3534 CX=0000 DX=0180 SP=FFEE BP=0000 SI=0000 DI=0000
DS=1D72 ES=1D72 SS=1D72 CS=1D72 IP 0109 OV UP EI PL NZ NA PO CY
1D72:0109 7D06 JNL 0118

What is the signed decimal value of the number in the AX register?

-16

2. What are the contents of BX after this program has been run:

```
MOV AX, 11h  
MOV CX, [1101]  
MOV BX, 1100h  
SUB AX, [BX]
```

Memory Location	Contents
1103	24
1102	D8
1101	00
1100	21

1100h

5. Determine the contents of register BL after the following instructions have been executed:

Program Listing

MOV BL, E2H

MOV CL, 1000b

ROL BL, CL

E2H

6. Which of the following DOS Debug instructions would set a break point at memory location 010E?

G=100 10E

12. How many bytes are there in this short sequence of code? B400CD16CD20

6

1010 0110 in 2's complement in base 10.

-90

17. Given:

13A7:0110 CD 20 32 20 54 48 69 73-20 69 73 20 74 68 65 20

13A7:0120 66 69 72 73 74 20 4D 69-64 74 65 72 6D 0D 24 D9

13A7:0130 00 C6 00 00 00 00 00 00-00 00 00 00 00 00 00 00 00 00 00

An input buffer is at memory location 0114, what is the size of the buffer in decimal?

84

A microprocessor with a 32-bit address bus could access how much memory?

4 GB

33. The number of nibbles in a double word are:

8

S2002

23. The instruction MOV BX, [SI] is what

Register indirect

13. Given: AX=2247 BX=0000 CX=0000 DX=0000 SP=FFEE BP=0000 SI=0000

DI=0000 DS=1D72 ES=1D72 SS=1D72 CS=1D72 IP=0106 NV UP EI PL ZR NA PE NC

1D72:0106 750F JZ 0118

What will the ip value be after a "t" command is executed in DOS Debug?

0118h

What are the contents of AX after this program

Handwritten assembly code:

```
MOV AX, 0010h
MOV BX, 1011h
SUB AX, [BX]
```

Handwritten memory dump table:

Memory location	Contents
1013	F8
1012	10
1011	21

B.

7. Int 21h, Function 09h requires three things set up before calling in order to correctly print a string, welcome_message. They are:

DS = SEG welcome_message, DX = OFFSET welcome_message, welcome_message terminated with 24h 24 = \$

15. Int 10h uses what function code to write a character to the screen and advance the cursor one by one character position?

0Eh

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

MOV BL, 7Eh
MOV AL, F0h
XOR BL, AL

F0h

12. Given

AX=FFD0 BX=3534 CX=0000 DX=0180 SP=FFEE BP=0000 SI=0000 DI=0000
DS=1D72 ES=1D72 SS=1D72 CS=1D72 IP=010C NV UP EI NG NZ NA PO CY
1D72:010C 7D06 JNL 0116

What will the IP value be after a "t" command is executed in DOS Debug?
No answer available

11. Which instruction below loads register CX, with the word beginning at physical address 40708b?

MOV CX, [0308]

10. Here is a short sequence of code: B400CD163C4A74043C6A7513. All of the instructions are two bytes long. The forth instruction operator is:

JZ

17. The instruction JNGE compares which of the following?

The sign flag and overflow flag to see if the NOR of the two flags is equal to

15. Int 10h uses what function code to write a character to the screen and advance the cursor by one character position?

0Eh

10. Here is a short sequence code B400CD163C4A74643C6A7513. All of the instructions are two bytes long. The second instruction operator is:
int

9. Which instruction below loads register BX, with the word beginning at physical address 90802h? Assume DS=9020, BX=2800

MOV BX, [0602]

8. You add 9+8 through a 4-bit integer unit. The state of the OF and CF flags after the add will be: (First digit the OF, second is the CF)

11

Question 1

Answer saved

Marked out of 1

How many nibbles are in single precision IEEE floating point format numbers (32bit)?

Select one:

- a. 16
- b. 64
- c. 8
- d. 80
- e. 10
- f. 4
- g. 2
- h. 20
- i. 32

Question 2

Answer saved

Marked out of 1

In the PIC18 with TRISD = 0b01111111, what is the configuration of the Port D?

Select one:

- a. Port D is set as an output port
- b. Port D is set as an input port
- c. Bit 7 of port D is set to output
- d. Port D is set to 127 decimal
- e. Bit 7 of port D is set to input

Question 3

Answer saved

Marked out of 1

A “pull up” resistor is used in digital circuits to do what?

Select one:

- a. To keep the signal “tied” high until the line is active (goes low)
- b. To make sure the digital line is always high
- c. To keep the voltage at 1Volt
- d. To keep the signal line “tied” low until the line is active (goes high)
- e. To keep the voltage at 0Volts

Question 4

Answer saved

Marked out of 1

With a POPA instruction, what will be the order of the accumulator, base, count, and data registers restored from the stack?

Select one:

- a. **AX**
- b. **BDCA**
- c. **ABCD**
- d. **BX**
- e. **ACDB**
- f. **DCBA**
- g. **DBAC**

Question 5

Answer saved

Marked out of 1

Which of the following is not a valid command for moving a number into a register in MASM?

Select one:

- a. **MOV AH, 0BCH**
- b. **MOV CL, 220**
- c. **MOV AX, 0BEEFH**
- d. **MOV AX, AADDH**
- e. **MOV BL, 01010010B**

Question 6

Answer saved

Marked out of 1

Given the short code, what is the value in AX after the program is run?

Program Listing

Mov BX, 0005

Push BX

Mov AX, 0100

POP AX

Select one:

- a. **0500**
- b. **0001**
- c. **0005**
- d. **0000**
- e. **0100**

Question 7

Answer saved

Marked out of 1

What flag(s) does the “LOOPNE” instruction look at to determine whether to loop or not?

Select one:

- a. SF and ZF
- b. BX
- c. SF and OF
- d. AX
- e. DX
- f. OF and CF
- g. ZF
- h. CX

Question 8

Answer saved

Marked out of 1

The instruction MOV CX, [4DAD] is what addressing mode?

Select one:

- a. Direct
- b. Register Indirect
- c. Scaled Index
- d. Immediate
- e. Register

Question 9

Answer saved

Marked out of 1

If CX is 0001, what will CX be after a “LOOPNZ” instruction?

Select one:

- a. **AX**
- b. **FFFF**
- c. **DX**
- d. **0003**
- e. **0002**
- f. **0000**
- g. **0001**
- h. **BX**

Question 10

Answer saved

Marked out of 1

What is(are) the advantage(s) of Assembly Language over C Language?

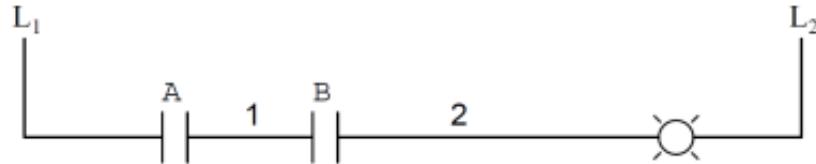
Select one:

- a. Hand assembly coding is much faster in C
- b. All the answers
- c. The Assembler creates much faster executable code
- d. C is transportable to other microprocessor architectures
- e. C does not need a compiler to be assembled in to an executable program.

Question 11

Answer saved

Marked out of 1



A	B	Output
0	0	0
0	1	0
1	0	0
1	1	1

The Ladder Logic diagram would represent which of the following?

Select one:

- a. XOR
- b. CLOSED CIRCUIT
- c. NAND
- d. NOR
- e. AND
- f. XNOR
- g. OPEN CIRCUIT
- h. OR

Question 12

Answer saved

Marked out of 1

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?

Select one:

- a. No project was setup
- b. No source file is identified (no .asm file)
- c. No listing file was selected (or requested)
- d. No ” .mak “ file specified
- e. MASM isn't installed correctly on the computer being used

Question 13

Answer saved

Marked out of 1

A “POP” instruction:

Select one:

- a. increments the IP
- b. increments the Stack Pointer, SP
- c. points to the data inputted from the keyboard
- d. stores the returning address
- e. decrements the Stack Pointer, SP

Question 14

Answer saved

Marked out of 1

Ladder Logic is used in _____

Select one:

- a. CPUs
- b. PLCs
- c. BIUs
- d. Power Logic Controllers
- e. ALUs

Question 15

Answer saved

Marked out of 1

18 hexadecimal would be what value in decimal?

Select one:

- a. 18
- b. 54
- c. 20
- d. 12
- e. 24
- f. 36

Question 16

Answer saved

Marked out of 1

The acronym PWM used for motor control, is defined as which of the following?

Select one:

- a. Parallel Width Manipulation
- b. Pulse Width Modulation
- c. Parallel Wide Manipulator
- d. Poor Wonderer Manipulator
- e. Parallel Width Modulator
- f. Pulse Wide Manipulator

Question 17

Answer saved

Marked out of 1

The letters “NO” labeled on relays and PLCs means which of the following?

Select one:

- a. Not On the controller
- b. Normally Open
- c. Indicates the system is functional
- d. Normal Operation
- e. No Opcode
- f. Normally Off

Question 18

Answer saved

Marked out of 1

How many nibbles are in extended precision IEEE floating point format numbers (80bit)?

Select one:

- a. 8
- b. 10
- c. 2
- d. 20
- e. 80
- f. 32
- g. 4
- h. 64
- i. 16

Question 19

Answer saved

Marked out of 1

In the PIC18 with TRISD = 0b10000000, what is the configuration of the Port D?

Select one:

- a. Port D is set to 127 decimal
- b. Port D is set as an input port
- c. Bit 7 of port D is set to output
- d. Port D is set as an output port
- e. Bit 7 of port D is set to input

Question 20

Answer saved

Marked out of 1

What is the numeric sequence of the key pad columns on the PPE board?

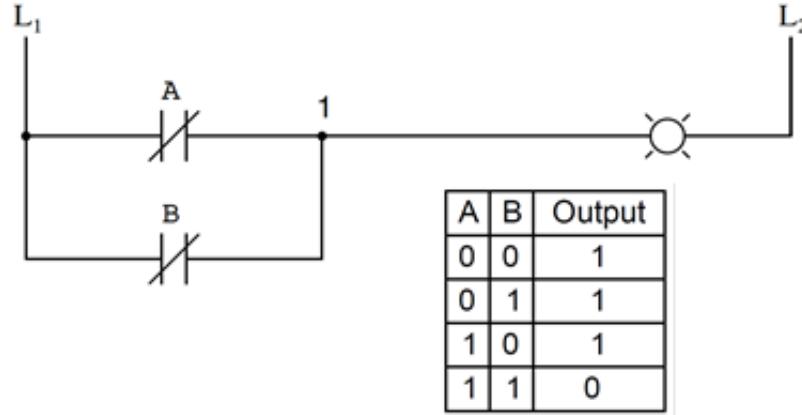
Select one:

- a. 37,2F,1F
- b. 2,4,6,8
- c. 378,379
- d. 08, 10, 20
- e. 1,2,4,8,
- f. 1,2,3,4

Question 21

Answer saved

Marked out of 1



A	B	Output
0	0	1
0	1	1
1	0	1
1	1	0

The Ladder Logic diagram would represent which of the following?

Select one:

- a. NOR
- b. CLOSED CIRCUIT
- c. XNOR
- d. OR
- e. XOR
- f. AND
- g. NAND
- h. OPEN CIRCUIT

Question 22

Answer saved

Marked out of 1

What Hex values must be sent to address the key pad rows on the PPE board?

Select one:

- a. 1,2,4,8,
- b. 378,379
- c. 37,2F,1F
- d. 08, 10, 20
- e. 2,4,6,8
- f. 1,2,3,4

Question 23

Answer saved

Marked out of 1

In MASM, with a “MOV CX, 24h” instruction, and a “LOOP” instruction, in decimal how many times will the program loop?

Select one:

- a. 36
- b. 0C
- c. 12
- d. 24
- e. 18

Question 24

Answer saved

Marked out of 1

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?

Select one:

- a. No project template for COM was selected
- b. MASM isn't installed correctly on the computer being used
- c. No ".mak" file specified
- d. No project was setup
- e. No source file is identified (no .asm file)

Question 25

Answer saved

Marked out of 1

What register(s) does the “LOOPNE” instruction look at to determine how many times to loop?

Select one:

- a. **CX**
- b. **AX**
- c. **OF and CF**
- d. **SF and ZF**
- e. **ZF**
- f. **DX**
- g. **SF and OF**
- h. **BX**

Question 26

Answer saved

Marked out of 1

In the Propeller, how many values does a method return?

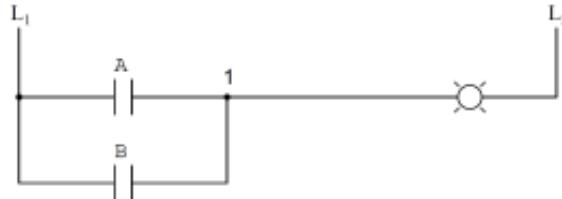
Select one:

- a. 4
- b. As many values as there are objects in the method
- c. 1
- d. 2
- e. 8

Question 27

Answer saved

Marked out of 1



The Ladder Logic diagram would represent which of the following?

Select one:

- a. OR
- b. NOR
- c. XOR
- d. OPEN CIRCUIT
- e. CLOSED CIRCUIT
- f. NAND
- g. AND
- h. XNOR

Question 28

Answer saved

Marked out of 1

In the Propeller microcontroller, the term “Method” is(are) which of the following?

Select one:

- a. Variables given to objects, they can be available to other objects or variable used within an object.
- b. A processor inside the propeller chip, the propeller has 8 methods per chip.
- c. A block of executable commands that has variables, can receive parameters, and returns a value.
- d. An application building block comprised of all the code.
- e. All the answers

Question 29

Answer saved

Marked out of 1

How much global RAM does the Propeller microcontroller have?

Select one:

- a. **4KB**
- b. **16KB**
- c. **2GB**
- d. **8MG**
- e. **32KB**

Question 30

Answer saved

Marked out of 1

Given:

13A7:0110 CD 20 30 20 54 68 69 73-50 30 73 20 74 68 65 20

13A7:0120 66 69 72 73 74 20 4D 69-64 74 65 72 6D 0D 24 D9

13A7:0130 00 C6 00 00 00 00 00-00 00 00 00 00 00 00 00 00 00 00

An input buffer is at memory location 0118, how many bytes are in the buffer (in decimal)?

Select one:

- a. 30
- b. 80
- c. 20
- d. 32
- e. 48
- f. 50
- g. 25

Question 32

Answer saved

Marked out of 1

What command in MASM-CodeView (debugging mode) would be used to step through a program line by line?

Select one:

- a. T (F8)
- b. P (F10)
- c. R
- d. RCS
- e. RIP

Question 33

Answer saved

Marked out of 1

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

Program Listing
MOV AL, 83h
ADD AL, 68h
DAA

Select one:

- a. 63h
- b. 151d
- c. 68h
- d. F1h
- e. 151h
- f. 51h
- g. EBh

Question 34

Answer saved

Marked out of 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 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

Select one:

- a. 50
- b. COM program
- c. 80
- d. COM program with different segments
- e. EXE program
- f. EXE program with overlapping segments
- g. COM program without a PSP

Question 35

Answer saved

Marked out of 1

How many bit(s) is/are required to represent a range of decimal numbers from 0 to 99?

Select one:

- a. 6
- b. 4
- c. 1
- d. 100
- e. 7
- f. 8
- g. 2

Question 36

Answer saved

Marked out of 1

In the PIC18 with TRISD = 0b11111111, what is the configuration of the Port D?

Select one:

- a. Bit 8 of port D is set to output
- b. Bit 8 of port D is set to input
- c. Port D is set to 127 decimal
- d. Port D is set as an output port
- e. Port D is set as an input port

Question 37

Answer saved

Marked out of 1

How many nibbles are in double precision IEEE floating point format numbers (64bit)?

Select one:

- a. 2
- b. 80
- c. 64
- d. 32
- e. 8
- f. 16
- g. 4
- h. 10
- i. 20

Question 38

Answer saved

Marked out of 1



A	B	Output
0	0	1
0	1	0
1	0	0
1	1	0

The Ladder Logic diagram would represent which of the following?

Select one:

- a. NAND
- b. NOR
- c. AND
- d. CLOSED CIRCUIT
- e. XNOR
- f. XOR
- g. OR
- h. OPEN CIRCUIT

Question 39

Answer saved

Marked out of 1

Which of the following is a valid x86 command for multiplying a number?

Select one:

- a. **MUL AX, BADh**
- b. **MUL BX**
- c. **MUL BX, 0C40Fh**
- d. **MUL 10h**
- e. **MUL CL,BL**

Question 40

Answer saved

Marked out of 1

The instruction MOV CX, [SI] is what addressing mode?

Select one:

- a. Immediate
- b. Direct
- c. Register
- d. Scaled Index
- e. Register Indirect

Question 41

Answer saved

Marked out of 1

Which of the following will cause a program with a LOOP instruction to loop 48 times (decimal)?

Select one:

- a. AX = 48d
- b. BX = 30h
- c. CX = 30h
- d. DX = 47h
- e. DX = 48h
- f. CX = 48h
- g. AX = 30h
- h. BX = 48d

Question 42

Answer saved

Marked out of 1

On the PPE board, what number(s) on the key pad is(are) pressed for an output port value of 08h and an input port value of 2Fh?

Select one:

- a. 5
- b. 1,2,3,4
- c. 0
- d. 378,379
- e. 37,2F,1F
- f. 8
- g. 1,2,4,8,
- h. 2,4,6,8
- i. 08, 10, 20
- j. 2

Question 43

Answer saved

Marked out of 1

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?

Select one:

- a. ah = 09h, ds:dx, "\$", 21h
- b. ah = 09h, es:dx, ":", 10h
- c. ah = 0eh, es:dx, ":", 10h
- d. ah = 0eh, ds:dx, "\$", 10h
- e. ah = 10h, ds:dx, "\$", 21h

Question 44

Answer saved

Marked out of 1

On the Arduino platform, what is the programming language used?

Select one:

- a. Spin
- b. x86 assembly
- c. C
- d. C#
- e. Forth
- f. Java
- g. F
- h. Arduino Basic

Question 45

Answer saved

Marked out of 1

If the SP is F00F, what is the SP value after a “POP CX” instruction?

Select one:

- a. **F012**
- b. **F00C**
- c. **F00D**
- d. **F011**
- e. **F010**

Question 46

Answer saved

Marked out of 1

In the PIC18 with TRISD = 0b11110000 and LATD = 0xAA, what value will be on Port D and shown on the LEDs?

Select one:

- a. **0F**
- b. **A0**
- c. **F0**
- d. **AA**
- e. **0A**

Question 47

Answer saved

Marked out of 1

Given the short sequence of instructions (code), what is the value in AX after the program is run?

Program Listing
Mov BX, 0001
Push BX
Mov AX, 0500
POP AX

Select one:

- a. 0000
- b. 0001
- c. 0100
- d. 0500
- e. 0005

Question 48

Answer saved

Marked out of 1

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
```

Select one:

- a. EXE program with overlapping segments
- b. MASM
- c. EXE program
- d. ADD
- e. COM program without a PSP
- f. Debug
- g. COM program
- h. COM program with different segments

Question 49

Answer saved

Marked out of 1

What is(are) the advantage(s) of C Language over Assembly Language?

Select one:

- a. C does not need a compiler to be assembled in to an executable program.
- b. All the answers
- c. C is transportable to other microprocessor architectures
- d. The Assembler creates much faster executable code
- e. Hand assembly coding is much faster in C

Question 50

Answer saved

Marked out of 1

What is -32.75_{10} in base two number system?

Select one:

- a. 011111.1100
- b. -100000.11000
- c. 100000.11000
- d. 100000.0111
- e. -111100.0111

Question 51

Answer saved

Marked out of 1

If 10Hex is ADDED with 2FHex would result in which of the following Decimal numbers?

Select one:

- a. 16
- b. 3F
- c. 63
- d. C0
- e. FF
- f. 0
- g. 45

Question 52

Answer saved

Marked out of 1

This section of memory represents a stack. What type of program is this?

BEEF:00D0 00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00 00 00 00

BEEF:00E0 00 01 02 03 04 05 06 07-08 09 0A 0B 0C 0D 0E 0F

BEEF:00F0 11 22 33 44 55 66 77 88-99 AA BB CC DD EE FF

Select one:

- a. ADD
- b. COM program
- c. Debug
- d. EXE program with overlapping segments
- e. COM program with different segments
- f. EXE program
- g. MASM
- h. COM program without a PSP

Question 53

Answer saved

Marked out of 1

A “pull down” resistor is used in digital circuits to do what?

Select one:

- a. To keep the signal “tied” high until the line is active (goes low)
- b. To keep the signal line “tied” low until the line is active (goes high)
- c. To keep the voltage at 1Volt
- d. To keep the voltage at 0Volts
- e. To make sure the digital line is always high

Question 54

Answer saved

Marked out of 1

With a PUSHA instruction, what will be the order of the accumulator, base, count, and data registers stored on the stack?

Select one:

- a. **DBAC**
- b. **DCBA**
- c. **BX**
- d. **ACDB**
- e. **AX**
- f. **BDCA**
- g. **ABCD**

Question 55

Answer saved

Marked out of 1

If CX is 0003, what will CX be after a “LOOPNZ” instruction?

Select one:

- a. **0002**
- b. **BX**
- c. **DX**
- d. **0000**
- e. **0001**
- f. **FFFF**
- g. **AX**
- h. **0003**

Question 56

Answer saved

Marked out of 1

In the PIC18 with TRISD = 0b01000000, what is the configuration of the Port D?

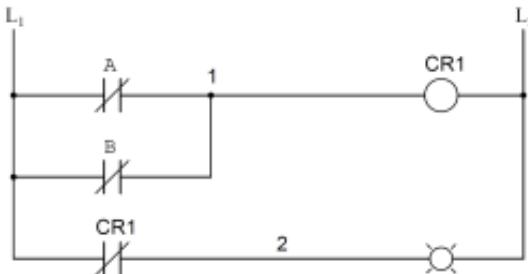
Select one:

- a. Port D is set as an input port
- b. Bit 6 of port D is set to output
- c. Port D is set as an output port
- d. Bit 6 of port D is set to input
- e. Port D is set to 127 decimal

Question 57

Answer saved

Marked out of 1



The Ladder Logic diagram would represent which of the following?

Select one:

- a. CLOSED CIRCUIT
- b. NAND
- c. NOR
- d. XNOR
- e. XOR
- f. OPEN CIRCUIT
- g. OR
- h. AND

Question 58

Answer saved

Marked out of 1

A “PUSH” instruction:

Select one:

- a. points to the data inputted from the keyboard
- b. increments the IP
- c. stores the returning address
- d. decrements the SP
- e. increments the SP

Question 59

Answer saved

Marked out of 1

The letters “NC” labeled on relays and PLCs means which of the following?

Select one:

- a. Normal Code
- b. No Code
- c. Not Closed
- d. Normally Closed
- e. Not a Computer

F2008 Mid 1

1. The number of nibbles in a double word are:

8

2. In using INT 10h to move the screen cursor to return on the same line, what value must be in the AX register?

0E0Dh

3. What is the hexadecimal encoding for loading DX with a word (value) 0820h?

BA2008

4. In x86 architecture, ALU stands for which of the following?

Arithmetic Logic Unit

5. What is the hexadecimal encoding for "JGE" for a jump back 12 bytes?

7DF2

6. The instruction MOV CX, [DADD] is what addressing mode?

Direct

7. A microprocessor with a 26-bit address bus could access how much memory?

64 MB

8. What is the hexadecimal encoding for adding BX with CX and storing the result in BX?

01CB

9. What is the advantage of C language over assembly language?

C is transportable to other microprocessor architectures

10. What are the contents of BX after this program has been run:

Memory Location	Contents
5514	24
5513	D8
5512	00
5511	21
5510	00

*CX
BX*

5511h

11. In adding 5+7 through a 4 bit integer unit. The state of the OF and CF flags after the add instruction would be:

OF=1, CF=0

12. In using INT 10h to set the video mode to 640 x 350, what value must be in the AX register?

0010h

13. How many bytes are there in this short sequence of code? B400CD16CD20

6

14. Moore's law has accurately predicted the growth rate in the number of transistors per die for the last 25 years. What is that rate?

Doubling every 18-24 months

15. Given

AX=FFD0 BX=3534 CX=0000 DX=0180 SP=FFEE BP=0000 SI=0000 DI=0000
DS=1D72 ES=1D72 SS=1D72 CS=1D72 IP=010D OV UP EI NG ZR NA PO NC
1D72: 010D 7509 JNZ 0116

What will the IP value be after a "t" command is executed in DOS Debug?

010Fh

16. F2 in 2's complement equals ___ in base 10.

-14

17. Which of the following DOS Debug instructions would be used change the IP register to 110?

RIP

18. Given

AX=2247 BX=0000 CX=0000 DX=0000 SP=FFEE BP=0000 SI=0000 DI=0000
DS=1D72 ES=1D72 SS=1D72 CS=1D72 IP=0106 NV UP EI NG NZ NA PE NC
1D72:0106 EB0F JMP 011F

What will the IP value be after a "t" command is executed in DOS Debug?

011Fh

19. Here is a short sequence of code: 7413A3EBCD167D213C04EBF0EB15. All of the instructions are a word long. The forth instruction operator is:

JGE

20. Given

AX=FFF0 BX=3534 CX=0000 DX=0180 SP=FFEE BP=0000 SI=0000 DI=0000
DS=1D72 ES=1D72 SS=1D72 CS=1D72 IP=0109 OV UP EI PL NZ NA PO CY
1D72: 0109 7D06 JNL 0118

What is the signed decimal value of the number in the AX register?

-16

21. Int 21h, Function 09h requires three things set up before calling in order to correctly print a string, Hello_msg. They are:

DS= SEG Hello_msg, DX = OFFSET Hello_msg, Hello_msg terminated with 24h

22. Given:

13A7:0110 CD 20 32 20 54 68 69 73-20 69 73 20 74 68 65 20

13A7:0120 66 69 72 73 74 20 4D 69-64 74 65 72 6D 0D 24 D9

13A7:0130 00 C6 00 00 00 00 00 00-00 00 00 00 00 00 00 00 00 00 00

An input buffer is at memory location 0114, what is the size of the buffer in decimal?

84

23. Given

AX=FF47 BX=0000 CX=0000 DX=0000 SP=FFEE BP=0000 SI=0000 DI=0000

DS=1D72 ES=1D72 SS=1D72 CS=1D72 IP=0104 OV UP EI NG NZ NA PE NC

1D72:0106 7022 JO 0128

What will the IP value be after a “t” command is executed in DOS Debug?

0128h

24. Which of the following DOS Debug instruction would set a break point at memory location 010E?

G = 100 10E

25. The binary number, 0110 1110, represents what values, in Hex, and as a BCD number?

6E, 6 invalid

S2012

1. With a POPA instruction, what will be the order of the accumulator, base, count, and data registers restored from the stack?

BDCA

2. 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)

3. Which of the following is not a valid command for a number into a register in MASM?

MOV AX, AADDH

4. Given the short code, what is the value in AX after the program is run?

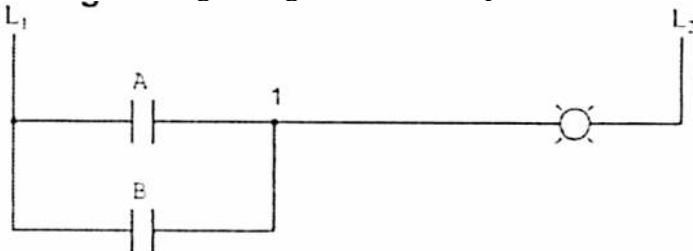
Program Listing
Mov BX, 0005
Push BX
Mov AX, 0100
POP AX

0005

5. 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)

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



OR

7. What flag(s) does the “LOOPNE” instruction look at to determine whether to loop or not?

ZF

8. 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)

9. A “POP” instruction:

increments the SP

10. Ladder Logic is used in _____

PLCs

11. What is the numeric sequence of the key pad columns on the PPE board?

37, 2F, 1F

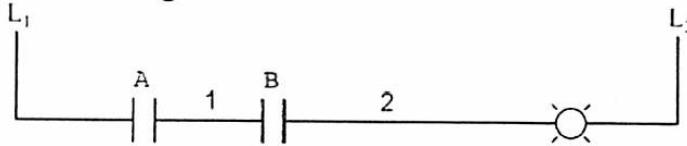
12. If CX is 0001, what will CX be after a “LOOPNZ” instruction?

0000

13. What command in MASM-CodeView (debugging mode) would be used to step through a program line by line?

T (F8)

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



AND

15. If the SP is F00F, what is the SP value after a “POP CX” instruction?

F011

16. 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.

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

Program Listing
MOV AL, 83h
ADD AL, 68h
DAA

51h

18. This section of memory represents a stack. What type of program is this?

BEEF: FF00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00

BEEF: FFE0 00 01 02 03 04 05 06 07-09 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

19. On the PPE board, what number(s) on the key pad is(are) pressed for an output port value of 08h and an input port value of 2Fh?

0

20. Given:

13A7: 0010 CD 20 30 20 54 68 69 73-30 69 73 20 74 6B 65 20

13A7: 0120 66 69 72 73 74 20 4D 69-64 74 65 72 6D 0D 24 D9

13A7: 0130 00 C6 00 00 00 00 00-00 00 00 00 00 00 00 00 00

An input buffer is at memory location 0118, how many bytes are in the buffer (in decimal)?

48

21. In the propeller, how many values does a method return

1

22. Which of the following instruction would be used to set the LED to light on the Arduino platform?

digitalWrite(ledPin, HIGH);

23. Which of the following will cause a program with a LOOP instruction to loop 48 times (decimal)?

CX= 30h

24. The acronym PWM used for motor control, is defined as which of the following?

Pulse Width Modulation

25. 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=1376 IP=0115 NV UP EI PL NZ NA PO NC

1376:0115 0100 ADD {BX+SI}, AL DS:0000=CD

EXE

26. The letters "NC" labeled on relays and PLCs means which of the following?

Norally Closed

27. What is -130 decimal in 2's complement (8 bits)?

01111110

28. 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

30. How much global RAM does the Propeller microcontroller have?

32KB

31. 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?

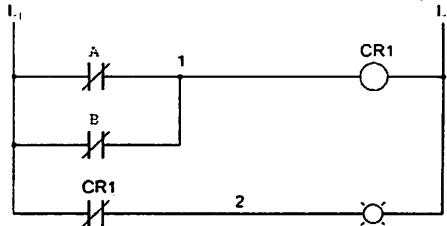
No project template for COM was selected*

32. 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

33. How many bit(s) is/are required to represent a range of decimal numbers from 0 to 99?

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



AND

35. In the Pic18 with TRISD = 0b01111111, what is the configuration of the Port D?

Bit 7 of port D is set to output

36. How many nibbles are in double precision IEEE floating point format numbers?

16

37. What is the decimal value of C5 5A 57 00 in IEEE single precision FP format?

-3493.4375

38. Which of the following is a valid x86 command for multiplying a number?

MUL BX

39. The letters "NO" labeled on relays and PLCs mans which of the following?

Normally Open

40. The instruction MOV CX, [SI] is what addressing mode?

Register Indirect

F2011 – EEE 174 Exams

1. Given the short code, what is the value in AX after the program is run?

Program Listing
Mov BX, 0500
Push BX
Mov AX, 0100
POP AX

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:

Decrement 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

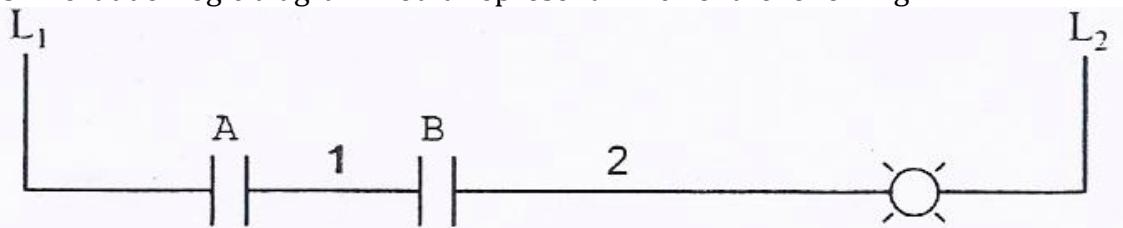
33. AND'ing 10H and 2FH will result in which of the following?

0

34. In the propeller microcontroller, the command “dira[4..9] := %0000000” 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

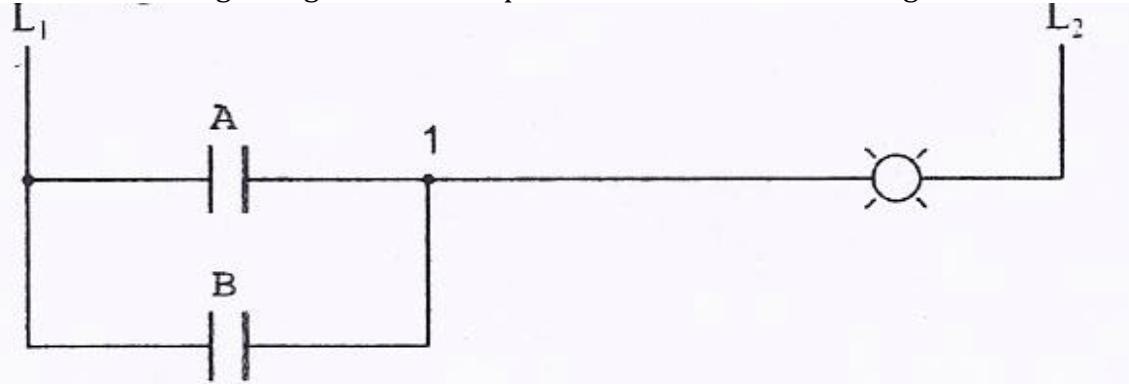
39. In MASM, with a “MOV CX, 24” instruction, and a “LOOP” instruction, how many times will the program loop in decimal?

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)

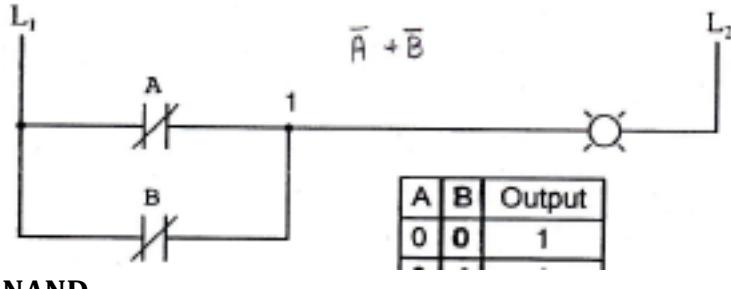
6. How many bits would be required to count from 0 to 511 in binary?

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

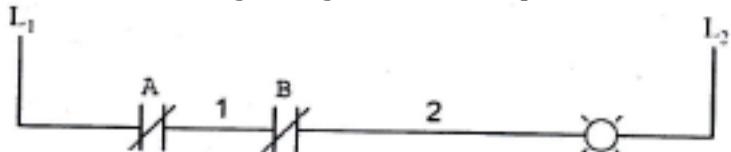
10. Which gate would be used for the function, $F = /C/D + CD$?

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?

	Input				Output			
	A	B	C	D	W	X	Y	Z
0	0	0	0	0	0	0	1	1
1	0	0	0	1	0	1	0	0
2	0	0	1	0	0	1	0	1
3	0	0	1	1	0	1	1	0
4	0	1	0	0	0	1	1	1
5	0	1	0	1	1	0	0	0
6	0	1	1	0	1	0	0	1
7	0	1	1	1	1	0	1	0
8	1	0	0	0	1	0	1	1
9	1	0	0	1	1	1	0	0

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?

	Input				Output			
	A	B	C	D	W	X	Y	Z
0	0	0	0	0	0	0	1	1
1	0	0	0	1	0	1	0	0
2	0	0	1	0	0	1	0	1
3	0	0	1	1	0	1	1	0
4	0	1	0	0	0	1	1	1
5	0	1	0	1	1	0	0	0
6	0	1	1	0	1	0	0	1
7	0	1	1	1	1	0	1	0
8	1	0	0	0	1	0	1	1
9	1	0	0	1	1	1	0	0

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 many Karnaugh maps would be required to solve the truth table?

A	B	C	D	a	b	c	d	e	f	g
0	0	0	0	1	1	1	1	1	1	0
0	0	0	1	0	1	1	0	0	0	0
0	0	1	0	1	1	0	1	1	0	1
0	0	1	1	1	1	1	1	0	0	1
0	1	0	0	0	1	1	0	0	1	1
0	1	0	1	1	0	1	1	0	1	1
0	1	1	0	1	0	1	1	1	1	1
0	1	1	1	1	1	1	0	0	0	0
1	0	0	0	1	1	1	1	1	1	1
1	0	0	1	1	1	1	1	0	1	1
to All other inputs				0	0	0	0	0	0	0

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?

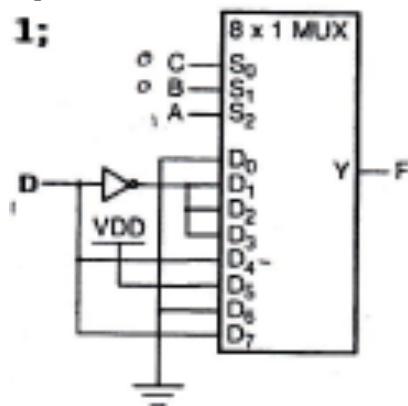
	Input				Output			
	A	B	C	D	W	X	Y	Z
0	0	0	0	0	0	0	1	1
1	0	0	0	1	0	1	0	0
2	0	0	1	0	0	1	0	1
3	0	0	1	1	0	1	1	0
4	0	1	0	0	0	1	1	1
5	0	1	0	1	1	0	0	0
6	0	1	1	0	1	0	0	1
7	0	1	1	1	1	0	1	0
8	1	0	0	0	1	0	1	1
9	1	0	0	1	1	1	0	0

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?

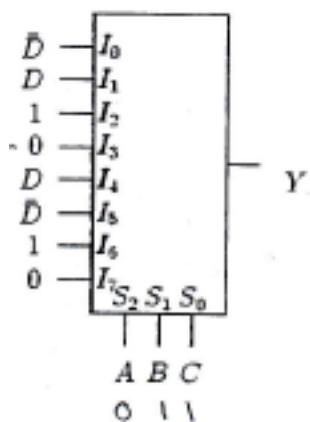


1

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?

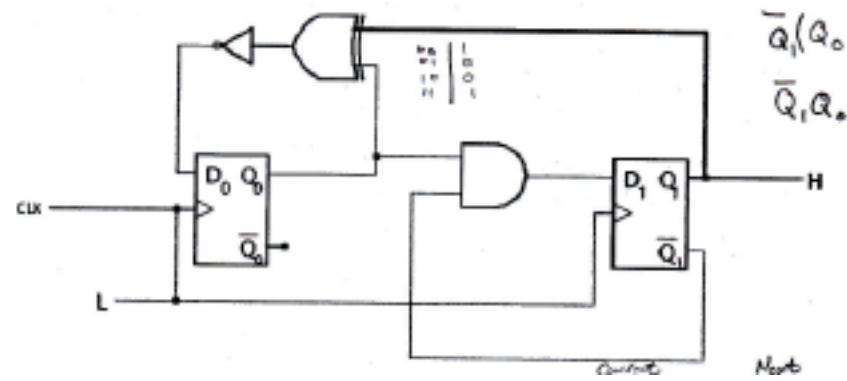


0

27. What would 6A Hex equal in base 10?

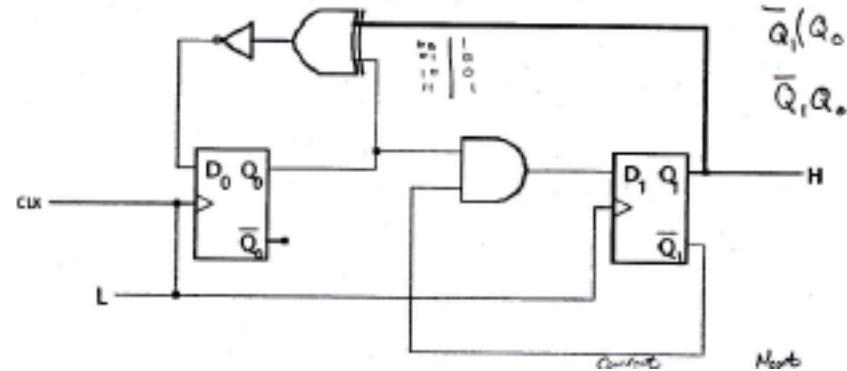
106

28. For the circuit shown, what is the equation for the next state of Q1?



Q0/Q1

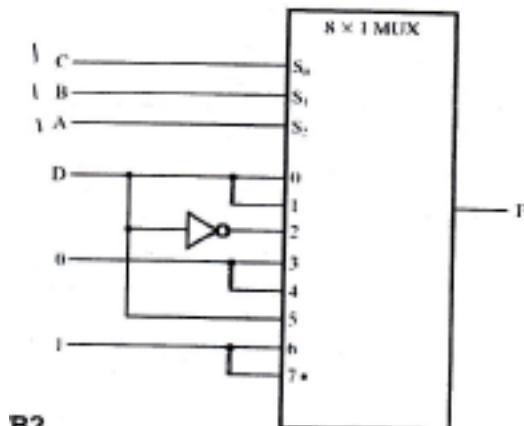
29. What will this circuit do?



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?

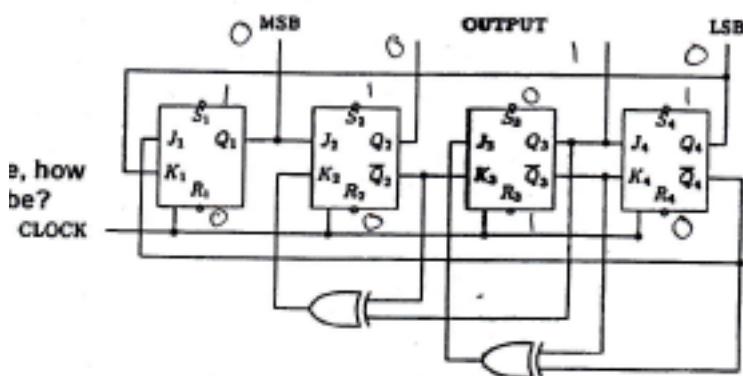


1

33. 0F in 2's complement equals (8 bits) ____ in base 10.
-14

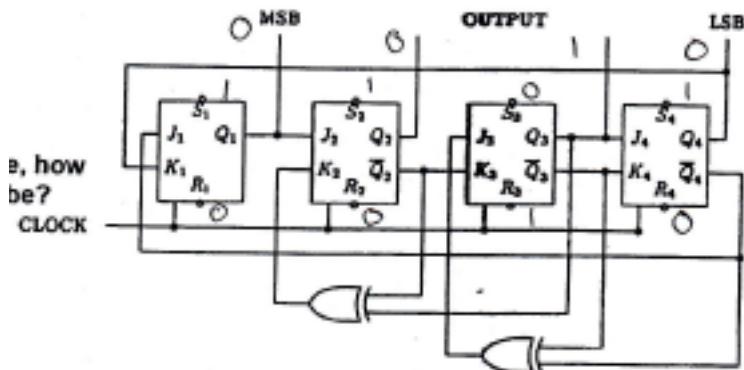
34. Which gate would be used for the function, $F = /AB + A/B$?
XOR

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:

Decrement 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
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:

Program Listing
MOV BL, E2H
MOV CL, 1000b
ROL BL, CL

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?

Program Listing
Mov BX, 0500
Push BX
Mov AX, 0100
POP AX

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

Program Listing
Mov BX, 0500
Push BX
Mov AX, 0100
POP AX

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:

Program Listing
MOV AL, 93h
ADD AL, 69h
DAA

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

Listing 2	
STD	↓, ↓
MOV CX, 500H	
MOV DX, 100H	
MOV SI, 250H	
AI: LODSB	
OUT DX, AL	
LOOP AI	

500h

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

Listing 3	
MOV AL, E2H	
MOV CL, 4H	
ROR AL, CL	

2EH

Refer to listing 4. What does this code do?

Listing 4	
MOV	DX, 0F010h
MOV	SI, 1001h
MOV	CX, 0Fh
CLD	
REP	OUTSB

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 E000h 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?

Decrement 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

Listing 7	
CLD	
MOV CX, 500H	
MOV DX, 100H	
MOV SI, 250H	
A1: LODSB	
OUT DX, AL	
LOOP A1	

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 blocked by giving the _____ instruction.

INTR, NMI, 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?

Listing Problem 2

```
MOV AL, FEH
```

```
MOV CH, FBH
```

```
ADD CH, AL
```

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?

Listing Problem 5

```
MOV SI, OFFSET DATA1
```

```
MOV DI, OFFSET DATA2
```

```
MOV CX, LENGTH
```

```
REPNZ CMPSB
```

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:

Listing for problem 17		Memory Location	Contents
MOV BX, 8002h		8003	4E
MOV AX, 3C7Ah		8002	24
ADD [BX], AX		8001	F2
DAA		8000	39

8002h

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

Listing for Problem 18

```
MOV AL, 2EH  
MOV CL, 8H  
ROR AL, CL
```

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.

Listing for problem 21

```
STD  
MOV CX, 250H  
MOV DX, 100H  
MOV SI, 500H  
A1: LODSB  
OUT DX, AL  
LOOP A1
```

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:

Listing for Problem 24

MOV AL, 45

ADD AL, 65

DAA

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:

Program Listing
MOV BL, 2EH
MOV CL, 0100b ← 4
ROL BL, CL

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
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 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. Double precision IEEE FP standard uses ____ nibbles to represent data:

16

7. A “PUSH” instruction:

Decrement 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?

Program Listing	
	Mov ax, 200
	Mov bx, 0300
	Push bx
	Pop ax

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:

Program Listing	
MOV BL, 2EH	
MOV CL, 0100b	
ROL BL, CL	

E2H

19. What are the contents of AL, AH, AX and EAX after the execution of the instruction, "MOV EAX, [30]"?

30	21	
31	43	
32	65	
33	87	

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:

Program Listing
MOV AL, 83h
ADD AL, 45h
DAA

28H

1. In string operations, register SI is used to point to the source 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?

Program Listing

MOV AL, 72h

ADD AL, 56h

DAA

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:

Program Listing

MOV BL, E2H

MOV CL, 1000b 8h

ROL BL, CL

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

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:

Decrement the SP

13. If 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:

Program Listing	
MOV BL, E2H	
MOV CL, 1000b	?
ROL BL, CL	8

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?

Program Listing	
Mov BX, 0500	
Push BX	
Mov AX, 0100	
POP AX	

0500

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

Program Listing

MOV AL, 82h

ADD AL, 68h

DAA *decimal adjust for addition*

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:

Program Listing

MOV BL, 2EH

MOV CL, 0100b

ROL BL, CL

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?

Program Listing
Mov BX, 0100
Push BX
Mov AX, 0500
POP AX

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