CSE 316 January 2021 Quiz

Form will be closed after 40 minutes.

The Intel 80286 processor uses 24 bits for addressing. If the memory is word addressable, how many bytes the processor can address?

○ 8 MB

○ 16 MB

○ 32 MB

○ 64 MB

For 12-bit ADC with Vref=12V, what is the maximum quantization error?

◉ 2.93 mV

○ 6.83 mV

○ 4.88 mV

○ 11.72 mV

Clear selection

Consider the following code snippet. What will be the value in AX in decimal after executing the instructions?

```
MOV AX, 02h
MOV CX, 10
LABEL:
SUB CX, 1
INC AX
LOOP LABEL
```

◉ 7

○ 8

○ 9

○ 10

In Intel 8086 microprocessors, addresses are represented in segment:offset form. Now, in an 8086 microprocessor, a byte variable is stored in memory location 81DF2h. In what segment, it has the offset 5E62h?

○ 7A9Fh

○ 7BF9h

○ 76D3h

○ 7F2Eh

For ATmega32, which of the below is true?

◉ Every global variable for an interrupt related code must be volatile

○ PD2(INT0) must be configured as input for INT0 to work

○ Reading ADCH turns both ADCL and ADCH to zero

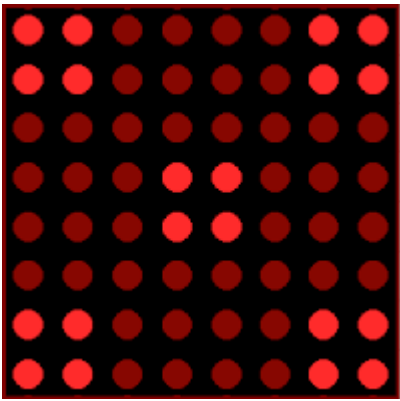○ Analog input value is kept constant during ADC conversion

Clear selection

Consider the following code snippet. What will be the value in BX in decimal after executing the instructions?

```
MOV AX, 08h
MOV BX, 0Fh
SUB AX, BX
JL THERE
MOV BX, 0Ah
JMP EXIT
THERE:
MOV BX, 0Bh
EXIT:
```

○ Compilation Error

○ 16

◉ 11

○ 10

Clear selection

Is it possible to generate the display below without using multiplexing in a 8x8 LED Matrix?

○ Yes

○ No

For 10-bit ADC of ATmega32, say ADC prescaler division factor is 8. How many seconds will it normally take to convert an analog value? Assume system internal frequency 1MHz.

○ 13 micro second

○ 80 micro second

⦿ 104 micro second

○ None of the above

Clear selection

Consider the following code snippet. What will be the value in AX in hexadecimal after executing the instructions?

```
MOV AH, 02H
MOV DL, '?'
PUSH 05H
INT 21H
MOV AL, 07H
ADD AH, 03H
POP AX
L:
```

○ 020Ah

○ Compilation Error

○ 0207h

○ 0307h

For 6-bit ADC, Vref=5V, what is the digital value of input analog voltage 2.5V?

- ○ 512
- ● 32
- ○ 128
- ○ 256

Clear selection

Consider the code snippet. If the array starts at 03E0h, what will be the address of value '21Eh'?

```
ARRAY   DT  10h, 50000h, 21Eh, 81DFh, 772Bh
```

- ○ 03E2h
- ○ 03EAh
- ○ 03F4h
- ● 03E4h

Clear selection

Why do we connect a potentiometer to VEE of a 16x2 LCD display?

- ○ To control character size
- ○ To control the number of pixels
- ○ To control brightness
- ● To control contrast

Clear selection

Suppose PRINT_VALUES is a NEAR procedure. The execution of RET in PRINT_VALUES causes the stack to be popped into

- ○ ES
- ○ DI
- ○ CS
- ○ IP

For ATmega32, which of the below is true?

○ sei() is used to enable all system inputs

○ cli() is used to block all system inputs

○ Interrupt Service Routine can return values

○ You have to manually enable nested interrupts

Clear selection

For ATmega32, suppose prescaler division factor is 2. How many ADC cycle is needed for the first ADC conversion after setting ADEN in ADCSRA?

○ 10

○ 25

○ 1.5

○ 13

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