CSE 331L / EEE 332L: Microprocessor Interfacing & Embedded System

Section: 7, Summer 2021

Quiz - 03

Marks: 10

Time: 25 mins

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The following program reads 16 decimal numbers and prints their average using bit-shift instruction, but there are some errors in it.

```
07 .CODE
08
09    mov ax, @data
10    mov ds, ax
11
12    mov bx, 16
13    mov dx, 0
14
15    _loop:
16    call scan_num
17    printn
18
19    add dx, cx
20
21    jnz _loop
22
23    average:
24    sar dx, 4
25
26    call print_num
27
28 EXIT:
29 MOV AH, 4CH
30 INT 21H
31
32 define_print_num
33 define_print_num_uns
34 define_scan_num
```

Q1: Find how many errors there are in the given code, and write the correct instructions. (5.5)

Ans:
There are 2 errors in the given code.

Correction:
Line 20: dec bx - is missing before jnz _loop instruction
Line 25: mov ax, dx - is missing before call print_num
As call print_num prints the result that is in ax.

Q2: Identify and explain the error/s in the following instructions: (4.5)

MOV BL, EFH
SHL BL
MOV DX, BL

Ans: There are 3 errors in the given instructions.
Corrections:
mov bl, 0efh
; there should be a 0 before efh to tell the assembler that it is a number

shl bl, 1 ;no unit was given to instruct how many times to shift.

Mov dl, bl ; there was a size mismatch. Dx is 16 bit but bl is 8 bit.