Assignment-01

CSE 341

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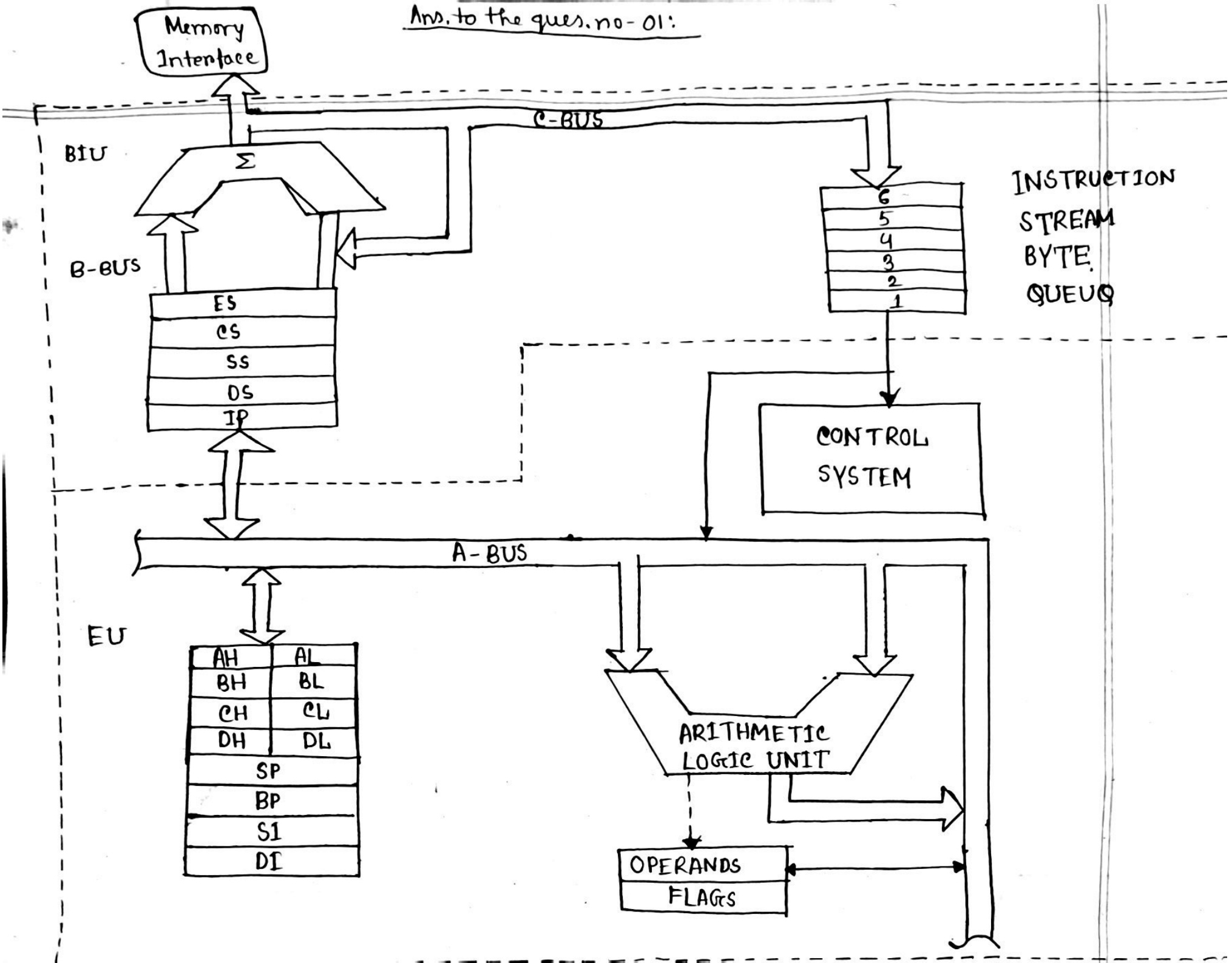
Section: 10

Ans. to the ques. no - 01:



Ans. to the ques. no-02:

(a) Physical Address $= (12345)_h$

Offset $\Rightarrow (2345)_h$

Base Address $= (10000)_h$

Segment number $= (1000)_h$

(b) Last address of the segment $= (10000)_h + (FFFF)_h$

$= (1FFFF)_h$

(c) 14th address of the segment $= (10000)_h + (000D)_h$

$= (1000D)_h$

$\therefore$ 14th address $= (1000D)_h$

Ans. to the ques. no - 03:

12345h can not be a valid starting point. The reason is, we define the starting number as,

Starting address of the segment = Segment number x 10

So, segment number = $\frac{12345}{10}$

$= 1234.5$

A segment number can not be a decimal number. and so, $(12345)_h$ can not be a valid starting point.

Ans. to the ques. no:-04:

FFFFEh is the given physical address

Now, smallest
the ~~largest~~ segment number should be,

First address of the segment $= (F0000)_h$
$+ (FFFE)_h$
$(FFFFE)_h$

So, Logical address = F000 : FFFE

∴ Smallest (lowest) segment number $= (F000)_h$

Then, the highest number should be,

Physical address $= (FFFFE)_h$
Offset $= -(000E)_h$
Base Address $= (FFFF0)_h$

So, Logical Address = FFFF : 000E

∴ Largest (highest) segment number $= (FFFF)_h$

Ans. to the ques. no - 5:

(a) $(00012)_h$ is the given physical address,

starting Segment Address	Offset	Logical Address
00000	0012	0000 : 0012
00010	0002	0001 : 0002
00020	- 0008	

00020 → Not possible

- 0008 → Invalid

In this case, 2 different logical addresses are not validly possible. The reason is, offset value has to be positive and, for this reason, it is not possible to generate 2 different logical addresses for $(12)_h$ physical address

(b) $(FFFFE)_h$

Starting Segment Addresses	Offset	Logical Addresses
F0000	FFFE	F000 : FFFE
F0010	FFEE	F001 : FFEE
F0020	FFDE	F002 : FFDE.

The 3 different logical addresses of the $(FFFFE)_h$ physical address are shown above.

1

Ans. to the ques. no - 6:

(i) $AX, (ABCD)_h = 1010\ 1011\ 1100\ 1101$

$BX, (9876)_h = 1001\ 1000\ 0111\ 0110$

$1\ 0100\ 0100\ 0100\ 0011$

(ii)

(iii) Zero flag = 0

Parity flag = 0

Sign flag = 0

Carry flag = 1

(iv) ~~Overflog~~ Overflow flag = 01.

The reason is, ~~both~~ carry bit ~~no~~ only flows MSB bit to beyond MSB.

Here, 2nd last MSB = 15th

Last MSB = 16th

Beyond MSB = 17th.

Here, carry flows from 16th bit to 17th bit only.

As, No carry flows from 15th bit to 16th bit, the overflow flag returns 1.