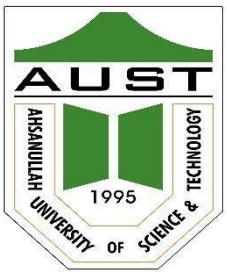

Ahsanullah University of Science & Technology

Department of Computer Science & Engineering

Course No: CSE2214
Course Title: Assembly Language Programming Sessional
Assignment No: 03

Date of Performance: 18.02.2020
Date of Submission: 25.02.2020
Submitted To: Ms. Tahsin Aziz & Md. Siam Ansary

Submitted by-

Group: C_1
Name: Noman Ahmed
Id: 18.01.04.108
Section: C

Question No: 01

Question: What are the differences between a register and a memory location?

Answer: The difference between a register and a memory location is given below:

Register	Memory location
1. Registers hold the operands or instruction that CPU is currently processing.	1. Memory holds the instructions and the data that the currently executing program in CPU requires.
2. Register holds the small amount of data around 32-bits to 64-bits.	2. Memory of the computer can range from some GB to TB.
3. CPU can operate on register contents at the rate of more than one operation in one clock cycle.	3. CPU access memory at the slower rate than register.
4.Located inside the CPU.	4.Located outside the CPU.

Question No: 02

Question: Determine the physical address of a memory location given by 0155 : D09Ah.

Answer: Given, segment is 0155 and offset D09A. Physical Address of a memory location is given bellow:

$$\begin{array}{r} 0\,1\,5\,5\,0 \\ +\quad D\,0\,9\,A \\ \hline E\,5\,E\,A \end{array}$$

So, the physical address of a memory location is E5EAh.

Question No: 03

Question: A memory location has physical address 4A37Bh. Compute

a. the offset address if the segment number is 40FFh.

b. the segment number if the offset address is 123Bh.

Answer:

a. Given, the segment number is 40FFh.

Let,

4A37Bh = 40FF0 + X

Or, X = 4A37Bh - 40FF0h

=938Bh

So, the relation is 4A37Bh = 40FF:938B

b. Given the offset address 123Bh.

We know that,

Physical address = segment * 10h + offset

Or, Segment * 10h = Physical address - offset

= 4A37Bh -123Bh

= 49140h

Or, Segment = 49140h.