



**Program: BC (CS)**  
**Subject: Microprocessor & Assembly Language**  
**Assignment Number: 02**  
**Course Code: CSC-304**  
**EDP Code: 102010031**  
**Semester: Fall 2020**

- Q.1 Discuss the structure and function of a hypothetical microcomputer in detail.
- Q.2 Explain different steps involved in instruction execution cycle when a memory operand is used.
- Q.3 Elaborate the data flow within a typical CPU during the instruction execution cycle using diagram.
- Q.4 Explain different modes of x86 processor's operation in detail.
- Q.5 Discuss the following basic program execution registers in detail:
- (a) General-Purpose Registers
  - (b) Segment Registers
  - (c) Instruction Pointer
  - (d) EFLAGS Register
- Q.6 Explain the following status flags:
- (a) Carry Flag
  - (b) Overflow Flag
  - (c) Sign Flag
  - (d) Zero Flag
  - (e) Auxiliary Carry Flag
  - (f) Parity Flag
- Q.7 Explain the x86 Memory Management for the following:
- (a) Real address mode
  - (b) Protected mode
- Q.8 Discuss the essential features of x86-64 instruction set.
- Q.9 Elaborate different modes of x86-64 processor's operation.
- Q.10 Discuss the basic program execution registers used in 64-bit mode.
- Q.11 List and explain different components traditionally found on PC motherboards.
- Q.12 Explain different features of Intel P965 Express Chipset.
- Q.13 Discuss the access levels required to perform the I/O operations using HLL.
- Q.14 How assembly language can choose any of the existing access levels to perform I/O operation and what are their tradeoffs?