COMSATS University Islamabad
Department of Computer Science
Mid Term Examination – Spring 2025

Class: (BS) CS/AI/CYS Semester: 6th
Course Code & Title: CSC325 Computer Organization & Assembly Language
Date: 14-04-2025 Time Allowed: 80 mins Max Marks: 25
Instructors: Mr. Taimur, Mr. Rashid, Mr. Raheel
Name: **Registration #**

CLO1

CLO1 : Articulate the components of a computer system along with its architecture. **Marks[4+2+4]**

Q1) Discuss the 8086-instruction set architecture along with instruction formats.
Q2) Differentiate between:
a) pipelined and non-pipelined computer architecture.
b) Vector and parallel processing.
Q3) Explain the IEEE Standard 754 Floating-Point Representation for x86 Processors. Convert -85.125 to IEEE FPS format (single precision).

CLO- 2 **Marks [2+4+5]**

CLO2: Review Memory Systems and Its' Hierarchy along with I/O Methods

Q4) Discuss the role of a direct memory access controller with its advantages.
Q5) The following is a data segment which represents five different variables. Show the values represented in hexadecimal form in RAM (considering x86 architecture).

Val	DW	254
Val2	DW	-352Ah
X	DD	-32000
Y	DQ	64000
Z	DB	"ABC", 10, 13, 0

Q6) With the help of a diagram depict and justify the need of memory hierarchy in a computer system.

CLO- 4 **Marks [2+2]**

CLO4: Demonstrate Assembly Language Capabilities

Q7) a) Write a snippet of assembly language code to save your complete registration number in data segment and first four alphabets of your name in register A and B.

b) Given below the data segment, write instructions in assembly language that copies the elements of array Arr1 to array Arr2. You must use base register addressing mode in your instructions.

```
        .data
Arr1    WORD    1,2,3,4,5,6,7,8,9,10,11, 12,13, 14, 15,16, 17, 18, 19,20
Arr2    WORD    20 DUP(?)
```

Best of Luck