



**End Term (Odd) Semester Examination November 2025**

Roll no.....

Name of the Course and semester: Diploma (CSE) / 5<sup>th</sup> Sem

Name of the Paper: Microprocessor and Programming

Paper Code: DTCS 501

Time: 3 hours

Maximum Marks: 100

**Note:**

- (i) *All the questions are compulsory.*
- (ii) *Answer any two sub questions from a, b and c in each main question.*
- (iii) *Total marks for each question are 20 (twenty).*
- (iv) *Each sub-question carries 10 marks.*

**Q1.** (2X10=20 Marks)

- a. Explain the internal architecture of the 8085 microprocessors with a neat block diagram. **CO-1**
- b. List and explain the Salient Features of the 8085 microprocessors. Discuss the limitations of 8-bit microprocessors. **(CO-1)**
- c. Explain the flag register of the 8085 microprocessors. **(CO-1)**

**Q2.** (2X10=20 Marks)

- a. Draw the functional block diagram of the 8086 microprocessors and explain the functions of the Bus Interface Unit (BIU) and the Execution Unit (EU). How does this architecture enable pipelining? **(CO-2)**
- b. What is memory segmentation? Define each segment in detail and also explain the memory address generation. **(CO-2)**
- c. Compare the 8085 and 8086 microprocessors. **(CO-2)**

**Q3.** (2X10=20 Marks)

- a. Explain the addressing modes of the 8086 microprocessors. **(CO-3)**
- b. Differentiate between the following instruction pairs with examples:  
(i) MOV and XCHG, (ii) PUSH and POP **(CO-3)**
- c. Write two examples each from Data Transfer and Arithmetic instruction groups and explain their operation. **(CO-3)**



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**Q4.**

(2X10=20 Marks)

- a. Explain the role of the following programming tools in the development of an assembly program: Editor, Assembler, Linker, and Debugger. (CO-4)
- b. Write 8086 assembly language program to find the largest number in an array of ten 8-bit numbers. (CO-4)
- c. Describe the Program Control Transfer instructions (JMP, CALL, RET, LOOP). (CO-4)

**Q5.**

(2X10=20 Marks)

- a. Explain the concept of I/O Mapped I/O and Memory Mapped I/O. (CO-5)
- b. Describe the memory interfacing of the 8086. Explain the concept of Even and Odd memory banks. (CO-5)
- c. Differentiate between a Procedure and a Macro. Explain the advantages and disadvantages of each. (CO-5)