

BACHELOR OF TECHNOLOGY (CBCS) (2021-COURSE)
B. Tech. Sem - III Computer Science & Engineering AI & ML : SUMMER : 2025
SUBJECT: COMPUTER ORGANIZATION & MICROPROCESSOR

Day : Thursday
Date : 15/05/2025

S-23938-2025

Time : 02:30 PM-05:30 PM
Max. Marks : 60

N.B.

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Assume suitable data **WHEREVER** necessary.
- 4) Draw neat diagrams **WHEREVER** necessary.

- Q.1** Draw and explain the architecture of 8086 microprocessor. (10)
OR
- Q.1** What is Addressing mode? Identify the following Addressing mode (10)
- | | |
|-----------------------|------------------------------|
| i) ADD AL, [SI + 02h] | iii) MOV BX, [BP + DI + 05h] |
| ii) JNC | iv) SBB AL, [4000h] |
- Q.2** Solve for the given problem 13/2 using Non-Restoration method of Division. Draw the flowchart of Non-Restoration method of Division Algorithm. (10)
OR
- Q.2** What is Booth's Algorithm? Solve for the given problem $-4*3$ using Booth's Algorithm for multiplication. (10)
- Q.3** What is Micro-programmed Control Unit? Explain the typical Micro-programmed Control Unit with the help of diagram. (10)
OR
- Q.3** Draw and explain the working of Sequence Counter Hardwired Control Unit. (10)
- Q.4** What is Memory? List the Memory hierarchy in computer and its features. (10)
OR
- Q.4** Explain the 4-Way Set Associative Cache Mapping Technique with the help of a labelled diagram. (10)
- Q.5** What is DMA? Explain its working. (10)
OR
- Q.5** a) Write Short Notes on USB port. (05)
b) Differentiate between Memory mapped IO and IO mapped IO. (05)
- Q.6** What is Pipelining? Explain the 3 Stage Pipelining of ARM7 Processor. (10)
OR
- Q.6** What is Pipelining Hazard? Give the solution to avoid these pipelining hazards. (10)
