

**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR**  
(AUTONOMOUS)

**B.Tech. III Year II Semester Regular & Supplementary Examinations June-2025**  
**MICROPROCESSORS AND MICROCONTROLLERS**

(Electrical & Electronics Engineering)

**Time: 3 Hours**

**Max. Marks: 60**

(Answer all Five Units 5 x 12 = 60 Marks)

**UNIT-I**

- |   |   |   |     |    |    |
|---|---|---|-----|----|----|
| 1 | a | Describe microprocessor based system with bus architecture. | CO2 | L1 | 6M |
|   | b | Describe the following memories                             | CO2 | L2 | 6M |
|   |   | i) Static RAM          ii) Dynamic RAM.                     |     |    |    |

**OR**

- |   |   |   |     |    |    |
|---|---|---|-----|----|----|
| 2 | a | Draw the block diagram of a computer with microprocessor as CPU and explain each block. | CO2 | L2 | 6M |
|   | b | Recall the functions of different Busses in the bus organization.                       | CO1 | L1 | 6M |

**UNIT-II**

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|---|---|---|-----|----|----|
| 3 | a | With neat diagram explain the microprocessor communication with memory. | CO1 | L3 | 6M |
|   | b | Describe the interrupts in 8085.  | CO2 | L3 | 6M |

**OR**

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|---|---|---|-----|----|----|
| 4 | a | Draw the architecture of 8085.                  | CO1 | L3 | 6M |
|   | b | Give the function of the following instructions | CO2 | L4 | 6M |
|   |   | i)LXI ii) SBI iii) POP iv) JPO v) DI vi) XCHG   |     |    |    |

**UNIT-III**

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|---|---|---|-----|----|----|
| 5 | a | Differentiate Microprocessor and Microcontroller. | CO2 | L2 | 6M |
|   | b | Discuss different Functions of ports.             | CO3 | L2 | 6M |

**OR**

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|---|---|--|-----|----|----|
| 6 | a | Explain how the 8051 microcontroller transfers the serial data in UART mode. | CO4 | L2 | 6M |
|   | b | Review the PSW Register in 8051 microcontroller.                             | CO3 | L1 | 6M |

**UNIT-IV**

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|---|---|--|-----|----|----|
| 7 | a | Define Addressing Modes. List and describe different addressing modes.                               | CO4 | L3 | 6M |
|   | b | Give the result in A and B after executing the following instruction with initial values A=07, B=09. | CO4 | L1 | 6M |
|   |   | i)DIV A,B ii) MUL A,B iii) INC A   |     |    |    |

**OR**

- |   |   |  |     |    |    |
|---|---|--|-----|----|----|
| 8 | a | Develop an assembly program of 8051 microcontroller addition of two 8-bit numbers in internal memory location 30h and 40h and store the result in a memory location 50h. | CO4 | L3 | 6M |
|   | b | Explain ADD, SUBB. DIV instructions of 8051 MC with example.   | CO4 | L2 | 6M |

**UNIT-V**

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|---|---|---|-----|----|----|
| 9 | a | Illustrate the seven-segment numeric led Display and explain the operation seven segment. | CO5 | L3 | 6M |
|   | b | Define the D/A and A/D conversions and write any five advantages.                         | CO4 | L1 | 6M |

**OR**

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|----|---|---|-----|----|----|
| 10 | a | Design the x-y matrix keyboard and coded key board.         | CO5 | L6 | 6M |
|    | b | Discuss about interrupt driven program for small keyboards. | CO5 | L2 | 6M |

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