

Reg. No:

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

**B.Tech III Year I Semester Regular Examinations March-2023**  
**MICROPROCESSORS AND MICROCONTROLLERS**

(Electronics and Communication Engineering)

Time: 3 hours

Max. Marks: 60

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

**UNIT-I**

- |   |   |   |     |    |    |
|---|---|---|-----|----|----|
| 1 | a | List different computer languages and explain them.   | CO2 | L2 | 8M |
|   | b | Write the steps required for writing and executing Assembly language Program and explain the procedure. | CO3 | L2 | 4M |

OR

- |   |  |  |     |    |     |
|---|--|--|-----|----|-----|
| 2 |  | List the three operations commonly performed by the Microprocessor or MPU. | CO2 | L1 | 12M |
|---|--|--|-----|----|-----|

**UNIT-II**

- |   |   |  |     |    |    |
|---|---|--|-----|----|----|
| 3 | a | Explain the functions of a program counter, stack pointer & ALU in 8085 $\mu$ P. | CO2 | L2 | 6M |
|   | b | Explain the Data transfer instructions of the 8085 microprocessor with example.  | CO2 | L2 | 6M |

OR

- |   |   |   |     |    |    |
|---|---|---|-----|----|----|
| 4 | a | Sketch neat the block diagram of 8085 Architecture and explain the function of each block.                          | CO3 | L3 | 8M |
|   | b | Outline the role of the following pins in the 8085 microprocessor<br>i) RESET OUT ii) ALE iii) HOLD & HLDA iv) TRAP | CO2 | L2 | 4M |

**UNIT-III**

- |   |  |  |     |    |     |
|---|--|--|-----|----|-----|
| 5 |  | Draw the pin diagram of 8051 microcontroller and describe the functionality of each pin in detail. | CO3 | L4 | 12M |
|---|--|--|-----|----|-----|

OR

- |   |   |  |     |    |    |
|---|---|--|-----|----|----|
| 6 | a | Analyze the functionality of I/O ports circuits in 8051 microcontroller. | CO4 | L4 | 8M |
|   | b | Describe the functions of PCON and SCON in the 8051 microcontroller.     | CO2 | L2 | 4M |

**UNIT-IV**

- |   |   |   |     |    |    |
|---|---|---|-----|----|----|
| 7 | a | Explain the moving data instructions of 8051 microcontroller with an example. | CO4 | L2 | 6M |
|   | b | Draw and explain the external addressing using mov x and mov c.               | CO4 | L2 | 6M |

OR

- |   |   |   |     |    |    |
|---|---|---|-----|----|----|
| 8 | a | Develop and write an assembly program of 8051 microcontroller to divide and multiplication two 8-bit numbers and store the result in a 2055 & 2057 memory location. | CO6 | L3 | 6M |
|   | b | Explain any three arithmetic operations Instructions of 8051 microcontroller with an example.   | CO4 | L2 | 6M |

**UNIT-V**

- |   |   |   |     |    |    |
|---|---|---|-----|----|----|
| 9 | a | Design and explain the large matrix keyboard.                     | CO5 | L2 | 6M |
|   | b | Define the D/A and A/D conversions and write any five advantages. | CO4 | L1 | 6M |

OR

- |    |   |  |     |    |    |
|----|---|--|-----|----|----|
| 10 | a | Draw the pin diagram and explain the intelligent LCD display.      | CO4 | L1 | 6M |
|    | b | Describe and design the hardware circuits for multiple interrupts. | CO5 | L1 | 6M |

\*\*\* END \*\*\*



INSTITUTE OF ENGINEERING & TECHNOLOGY: FUTTUR

B.Tech III Year I Semester Regular Examinations March-2023

THE MICRO EXAMINATIONS CONTROLLERS

(Electronics and Communication Engineering)

Max. Marks: 60

Time: 3 hours

(Answer all Five Units x 12 = 60 Marks)

285

UNIT-I

- 1 a) List the four types of languages and explain them.
- b) Write the steps required for writing and executing Assembly language Program and explain the process.

OR

- 2 a) List the three operations commonly performed by the Microprocessor or MPU.

UNIT-II

- 3 a) Explain the function of a program counter. Mark pointer & ALU in 8085  $\mu P$ .
- b) Explain the data transfer instructions of the 8085 microprocessor with example.

OR

- 4 a) Sketch and explain the block diagram of 8085 Architecture and explain the function of each block.
- b) Outline the role of the following pins in the 8085 microprocessor:  $\overline{RD}$ ,  $\overline{WR}$ ,  $\overline{MIO}$ ,  $\overline{MIO}$ ,  $\overline{MIO}$ ,  $\overline{MIO}$ .

UNIT-III

- 5 Draw the pin diagram of 8051 microcontroller and describe the functionality of each pin in detail.

OR

- 6 a) Analyze the functionality of IO pins circuit in 8051 microcontroller.
- b) Describe the functions of PCON and SCON in the 8051 microcontroller.

UNIT-IV

- 7 a) Explain the moving data instructions of 8051 microcontroller with an example.
- b) Draw and explain the external addressing using  $MOVX$  and  $MOVB$ .

OR

- 8 a) Develop and write an assembly program of 8051 microcontroller to divide and multiplication two 8-bit numbers and store the result in a 2025 & 2027 memory location.

- b) Explain any four arithmetic operations instructions of 8051 microcontroller with an example.

UNIT-V

- 9 a) Design and explain the input matrix keyboard.
- b) Define the D/A and A/D converters and write any five advantages.

OR

- 10 a) Draw the pin diagram and explain the integrated LCD display.
- b) Describe and design the hardware circuits for variable frequency.

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