



MARRI LAXMAN REDDY
INSTITUTE OF TECHNOLOGY AND MANAGEMENT

(AN AUTONOMOUS INSTITUTION)

(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)

Accredited by NBA and NAAC with 'A' Grade & Recognized Under Section 2(f) & 12(B) of the UGC act, 1956

III B.Tech I Sem Regular End Examination, December 2022

Microprocessors and Microcontrollers

(EEE)

Time: 3 Hours.

Max. Marks: 70

Note: 1. Question paper consists: Part-A and Part-B.

2. In Part - A, answer all questions which carries 20 marks.

3. In Part - B, answer any one question from each unit.

Each question carries 10 marks and may have a, b as sub questions.

PART- A

(10*2 Marks = 20 Marks)

1. a) What are the capabilities of I/O address lines of microprocessor? 2M C01 L2
- b) What is Logical Address? 2M C01 L1
- c) What is a subroutine program? 2M C02 L1
- d) Give the advantages of assembly language over machine language. 2M C02 L3
- e) What are different types of interrupts are used in 8051 microcontroller? 2M C03 L4
- f) What is the function of Port 3 of 8051 microcontroller? 2M C03 L3
- g) What is interfacing and its types? 2M C04 L1
- h) Write the important features of 8257. 2M C04 L3
- i) Write about ARM development tools. 2M C05 L4
- j) Write the Features of ARM architecture. 2M C05 L2

PART- B

(10*5 Marks = 50 Marks)

- 2 a) Draw the block diagram of 8086 and explain BIU and EU? 5M C01 L3
- b) With a neat diagram explain a typical maximum mode operation of 8086 system? 5M C01 L4

OR

- 3 a) Draw the Register organization of 8086 Microprocessor and explain the operation of each register in detail. 5M C01 L3
- b) Explain the memory segmentation and instruction Queue of 8086. 5M C01 L5
- 4 a) Define addressing mode and explain the different addressing modes presented in 8086 microprocessor with examples. 5M C02 L3
- b) List out assembler directives of 8086 and explain them briefly? 5M C02 L4

OR

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|-----------|----|--|----|-----|----|
| 5 | a) | List the string manipulation instruction set of 8086 microprocessor with examples. | 5M | C02 | L4 |
| | b) | Write an 8086 assembly program for a 16-bit arithmetic addition, subtraction, multiplication and division. | 5M | C02 | L6 |
| 6 | a) | Describe briefly the register set of 8051 microcontroller | 5M | C03 | L2 |
| | b) | Write an assemble language program for LED blinking in 8051 microcontroller. | 5M | C03 | L6 |
| OR | | | | | |
| 7 | a) | Explain the different addressing modes used in 8051 microcontroller with examples. | 5M | C03 | L5 |
| | b) | Draw the internal architecture of 8051 Microcontroller and explain its operation. | 5M | C03 | L3 |
| 8 | a) | Explain the concept of keyboard and interfacing along with block diagram. | 5M | C04 | L4 |
| | b) | Draw the block diagram of 8251 and explain about each block. | 5M | C04 | L3 |
| OR | | | | | |
| 9 | a) | What is the principle of stepper motor? How does a stepper motor be interfaced? | 5M | C04 | L3 |
| | b) | Explain the interfacing procedure of an 8 - bit DAC with 8086 microprocessor. | 5M | C04 | L4 |
| 10 | a) | Draw and explain the ARM microcontroller? | 5M | C05 | L3 |
| | b) | Explain briefly the data processing instructions for ARM processor. | 5M | C05 | L3 |
| OR | | | | | |
| 11 | a) | Write the difference between exceptions and interrupt in arm | 5M | C05 | L4 |
| | b) | Explain the CPSR operation in ARM microcontroller. | 5M | C05 | L3 |

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CO - Course Outcome

BL - Blooms Taxonomy Levels