



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

II B.Tech II Sem Regular End Examination, July 2022

Computer Organization and Microprocessors

(CSE, CSI, IT)

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)

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|-------|---|----|-----|-----|
| 1. a) | Define computer architecture? | 2M | C01 | BL1 |
| b) | What is a program interrupt and interrupt service provider? | 2M | C01 | BL1 |
| c) | What do you mean by displacement in an instruction. | 2M | C02 | BL1 |
| d) | What is the use of assembler directives? | 2M | C02 | BL1 |
| e) | How a stack is operated? | 2M | C03 | BL1 |
| f) | How do you generate a delay in software? | 2M | C03 | BL1 |
| g) | What is the use of Booth's algorithm? What is its advantage? | 2M | C04 | BL1 |
| h) | How are peripheral devices different from central computer? | 2M | C04 | BL1 |
| i) | What is the difference between branch, jump and subroutine? | 2M | C05 | BL1 |
| j) | What is required to supervise the flow of information between auxiliary memory and main memory? | 2M | C05 | BL1 |

PART- B

(10*5 Marks = 50 Marks)

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|-------|---|----|-----|-----|
| 2. a) | With an example, explain the control timing signals? | 5M | C01 | BL4 |
| b) | With a neat diagram, explain the block diagram of a digital computer? | 5M | C01 | BL4 |

OR

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|-------|---|-----|-----|-----|
| 3. | Discuss different addressing modes in detail and with suitable examples. | 10M | C01 | BL2 |
| 4. a) | Explain the physical memory organization in 8086 system. | 5M | C02 | BL4 |
| b) | What do you mean by pipelined architecture? How is it implemented in 8086 system? | 5M | C02 | BL1 |

OR

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|----|--|-----|-----|-----|
| 5. | Explain 8086 architecture with a neat diagram. | 10M | C02 | BL4 |
|----|--|-----|-----|-----|

- 6 a) Write a program to add a data byte located at offset 0500H in 2000H segment to data byte available at 0600H in the same segment and store the result at 0700H in the same segment. 5M C03 BL3
- b) Distinguish between assembly language and machine language? 5M C03 BL2
- OR**
- 7 What is a macro? How do you define a macro? Distinguish between subroutine and macro? What are the advantages and disadvantages of macros over subroutines? 10M C03 BL1
- 8 a) How I/O devices are connected using I/O bus? What information do they exchange? Discuss with neat diagram. 5M C04 BL1
- b) Why does DMA have priority over CPU, when both request a memory transfer? Explain. 5M C04 BL1
- OR**
- 9 Discuss about Booth's multiplier algorithm with flowchart using an example. 10M C04 BL6
- 10 a) Explain parallel processing with neat diagram. 5M C05 BL3
- b) Discuss about array processors. 5M C05 BL6
- OR**
- 11 What is associative memory? Design the hardware organization of associative memory consisting of memory array and logic for m words with n bits per word? 10M C05 BL6

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