



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 I Sem Regular End Examination, February-2022 Digital Logic Design and Computer Organization (CSC, CSD, CSM)

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) | Define computer. | 2M | C01 | BL1 |
| b) | What are the advantages of floating-point representation? | 2M | C01 | BL1 |
| c) | Compare multiplexer and de-multiplexer. | 2M | C02 | BL2 |
| d) | What are universal gates and why they are called as universal gates? | 2M | C02 | BL1 |
| e) | List out the basic data transfer machine instructions. | 2M | C03 | BL1 |
| f) | What is meant by subroutine? | 2M | C03 | BL1 |
| g) | What is the purpose of cache memory? | 2M | C04 | BL1 |
| h) | What is meant by register transfer? | 2M | C04 | BL1 |
| i) | What is the purpose of interrupt disabling? | 2M | C05 | BL1 |
| j) | Explain about device control. | 2M | C05 | BL2 |

PART- B

(10*5 Marks = 50 Marks)

- | | | | | |
|------|---|----|-----|-----|
| 2 a) | Compare multiprocessors and multi computers. | 5M | C01 | BL4 |
| b) | Explain different performance measures used to represent a computer system performance. | 5M | C01 | BL5 |

OR

- | | | | | |
|---|---|-----|-----|-----|
| 3 | Explain in detail about floating point representation and also express the following numbers in decimal: $(10110.0101)_2$, $(16.5)_{16}$, $(26.24)_8$. | 10M | C01 | BL5 |
|---|---|-----|-----|-----|

- | | | | | |
|------|---|----|-----|-----|
| 4 a) | Discuss about various types of registers. | 5M | C02 | BL6 |
| b) | Explain in brief about logic gates. | 5M | C02 | BL5 |

OR

- | | | | | |
|---|-------------------------------------|-----|-----|------|
| 5 | Discuss in detail about flip-flops. | 10M | C02 | BL6. |
|---|-------------------------------------|-----|-----|------|

- 6 a) Explain about Booth's multiplication algorithm with example. 5M C03 BL5
b) Write and explain addition and subtraction algorithm with flow chart. 5M C03 BL6

OR

- 7 Explain in detail various addressing modes with examples. 10M C03 BL5

- 8 a) Distinguish between RAM and ROM. 5M C04 BL4
b) Discuss about hardwired control. 5M C04 BL6

OR

- 9 Elaborate multiple-bus organization with a neat sketch. 10M C04 BL6

- 10 a) Discuss on serial-interface circuit. 5M C05 BL6
b) Explain the components and functions of computer bus. 5M C05 BL5

OR

- 11 What is DMA? Explain in detail with a neat diagram. 10M C05 BL5

---oo0oo---