| Student Name:<br>University Roll No.: | Printed Pages:1 |
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**School of Engineering**
**First Theory Sessional Examination**
**Even Semester (AS: 2024-25)**

**B. Tech: CSE/CSAI** **[Year: 2nd] [Semester : 4th]**

**Course Title:** Computer Organization & Architecture
**Course Code: NCS4303**

**Max Marks: 30**
**Time:** 1*hr*

***Instructions:*** *1-Mention any assumptions made.*
*2-Notations have usual meaning.*

| SECTION 'A' Q.N.1. Attempt all parts of the following: | | Course Objective | Ma |
|---|---|---|---|
| a) | How many types of Buses are in Computer architecture? | CO1 | 1 |
| b) | Explain two logical micro operations? | CO1 | 1 |
| c) | Right circular shift of the following data - (i) 10101110 (ii) 01100110 | CO1 | 1 |
| d) | List three types of control signals. | CO1 | 1 |
| e) | What is Register Transfer language? | CO1 | 1 |

| SECTION 'B' Q.N.2. Attempt any two parts of the following: | | Course Objective | Marks |
|---|---|---|---|
| a) | What are the different bus Arbitration techniques? Explain in brief. | CO1 | 7.5 |
| b) | Draw and explain Von – Neumann architecture of a Computer in detail. | CO1 | 7.5 |
| c) | Define briefly arithmetical and logical shift micro operation in a computer. Perform arithmetic right and left shift micro operation for 10110011. | CO1 | 7.5 |

| SECTION 'C' Q.N.3. Attempt any one part of the following: | | Course Objective | Marks |
|---|---|---|---|
| a) | Draw the flow chart of Booths algorithm for multiplication and show the multiplication process using Both algorithm for (−5) × (+3). | CO1 | 10 |
| b) | Explain interconnection structure and its types in computer organization and architecture. | CO1 | 10 |
| c) | Explain Bus and Memory transfer techniques. | CO1 | 10 |

***Table 1: Mapping between COs and questions***

| CO'S | Question Numbers | Total Marks |
|---|---|---|
| CO1 | 1(a), 1(b), (1(c), 1(d), 1(e), 2(a), 2(b), 2(c), 3(a), 3(b) 3(c) | 57.5 |