**Internal Assessment Question Paper – 1**

**M.S. Ramaiah Institute of Technology**

**(Autonomous Institute, Affiliated to VTU)**

**Department of CSE**

**Programme: B.E Term: March to June 2021**

**Course : Computer Organization and Architecture Course Code: CS45**

**CIE: I Sem: IV Section: A, B & C**

**Max Marks: 30 Time: 1Hr Portions for Test: L1-L21**

**Date: 11/6/2021**

**Instructions to Candidates: Question 1 is compulsory. Answer any one question from 2 or 3.**

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| **Sl#** | **Question** | **Marks** | **Bloom’s Level** | **CO Mapping** |
| **1** | **a) Answer the following:**   1. **Addressing mode of this instruction ADD (20)R1, R2 is \_\_\_\_\_\_** 2. **Compare RISC and CISC architecture** 3. **Represent the string ‘MSRIT’ in Big-endian and Little-Endian Format** 4. **Give example for One address instruction** 5. **Define subroutine** | **5** | **Remember** | **CO1** |
| **b) Perform 22/5 using restoring division algorithm (Show all the steps).** | **5** | **Apply** | **CO2** |
| **c) Discuss the following addressing modes with an example**  **i) Indirect mode ii) Relative mode iii) Auto decrement mode** | **5** | **Understand** | **CO2** |
| **2** | **a) Summarize the factors that affect the performance of a computer.** | **5** | **Understand** | **CO1** |
|  | **b) Perform 35 \* -24 using Bit-pair recoding technique.** | **5** | **Apply** | **CO2** |
| **c) Show the control sequence for the execution of ADD (R4), R2 using a single bus organization.** | **5** | **Apply** | **CO3** |
|  | **(OR)** |  |  |  |
| **3** | **a) Register R1 and R2 of a computer contains the decimal values 2400 and 3000. What is the effective address of the memory operand in each of the following instructions?**  **i) LOAD 20(R1),R5 ii) MOVE #5000,R5 iii) ADD –(R2),R5 iv) SUBTRACT (R1)+,R5** | **5** | **Apply** | **CO1** |
|  | **b) Write the binary equivalent for the following floating point numbers using IEEE 754 single precision and double precision format:**  **i)124.45 ii) -369.25** | **5** | **Apply** | **CO2** |
| **c) Define the following:**  **i) Hardwired ii) Multi programmed control units** | **5** | **Remember** | **CO3** |

**CO1: Describe an overview of computer hardware and software which includes the basic functional units, interconnection, addressing techniques and instruction sequencing.**

**CO2: Appraise different algorithms used to perform fast multiplication, division and to represent floating point numbers in binary.**

**CO3: Examine basic processing unit and importance of pipelining to achieve instruction level parallelism**.