Roll No

PRESIDENCY UNIVERSITY
BENGALURU

SCHOOL OF ENGINEERING
MID TERM EXAMINATION - OCT 2023

Semester : Semester III - 2022   **Date :** 30-OCT-2023
Course Code : CSE2009   **Time :** 2:00PM - 3:30PI
Course Name : Sem III - CSE2009 - Computer Organization and Architecture   **Max Marks :** 50
Program : B. TECH   **Weightage :** 25%

Instructions:
(i) Read all questions carefully and answer accordingly.
(ii) Question paper consists of 3 parts.
(iii) Scientific and non-programmable calculator are permitted.
(iv) Do not write any information on the question paper other than Roll Number.

PART A

ANSWER ALL THE QUESTIONS   **(5 X 2 = 10M)**

1. List the different types of registers inside the processor of a Computer System.

    (CO1) [Knowledge]

2. State the performance equation?

    (CO1) [Knowledge]

3. What do you mean by Register Transfer Notation?

    (CO1) [Knowledge]

4. Define word in memory. What is the word length of 32-bit machine.

    (CO1) [Knowledge]

5. Assume that the value stored at LocA is 3500, mention the Effective Address and the addressing modes of the operands of instruction, ADD 20(LocA), R1.

    (CO1) [Knowledge]

PART B

ANSWER ALL THE QUESTIONS   **(4 X 5 = 20M)**

6. Illustration the operations of Stack with mnemonic code for error checking.

    (CO1) [Comprehension]

7. Evaluate (A+B)/(C+D) in Three address, Two address and one address instruction.

    (CO1) [Comprehension]

8. In Subroutine, discuss the parameter passing technique using registers with mnemonic code.

    (CO1) [Comprehension]

9. Illustrate the process of subroutine **call** and **return** using Link register.

(CO1) [Comprehension]

PART C

ANSWER THE FOLLOWING QUESTION   **(1 X 20 = 20M)**

10.   A) Illustrate & explain the connection between the processor and memory and write the basic steps required to execute the instruction ADD LocA,R1 . (10 marks)

B) Register R1 and R2 of computer holds the value 3200 and 4600 respectively. Identify the Addressing mode of the operands and the effective address of the source operand in each of the following instructions? (Assume 64 bit word length and each are individual instructions) (10 marks)

1. Load 20(R1), R2
2. Subtract (R1) +, R5
3. Add – (R2), R5
4. Store 30(R1,R2), (R5)
5. Move #6080, R5

(CO1) [Application]