Roll No												

PRESIDENCY UNIVERSITY
BENGALURU

SCHOOL OF ENGINEERING

MAKEUP EXAMINATION – JAN 2023

Course Code: CSE 223

Course Name: Computer Organization

Program : B. Tech

Date: 30-JAN-2023

Time: 09.30 AM – 12.30 PM

Max Marks: 80

Weightage: 40 %

Instructions:

(i) Read all the questions carefully and answer accordingly.

(ii) Question paper consists of 3 parts.

(iii) Scientific and Non-programmable calculators are permitted.

Part A [Memory Recall Questions]

Answer all the Questions. Each question carries FOUR marks. (6Qx 4M= 24M)

1. Define the advantages of Carry-look Ahead Addition. (C.O.No.3) [Knowledge Level]

2. Differentiate between the two address and three address instruction formats with suitable example. (C.O.No.2) [Knowledge Level]

3. State the difference between EPROM and EEPROM. (C.O.No.4) [Knowledge Level]

4. Define data dependency with an example? If two instructions are data dependent can they be executed simultaneously? (C.O.No.4) [Knowledge Level]

5. List the control sequence for the instruction SUB R1, R2, R3 to be executed in a CPU having single bus organization. (C.O.No.4) [Knowledge Level]

6. State the difference between Big-Endian and Little-Endian representation.(C.O.No.1) [Knowledge Level]

Part B [Thought Provoking Questions]

Answer all the Questions. Each question carries TWELVE marks. (2Qx12M=24M)

7. Explain the internal organization of 32*8 Memory chip. State the external connections are required for the chip. (C.O.No.4) [Comprehension Level]

8. In Ripple Carry Adder, each full adder has to wait for its carry-in from its previous stage full adder. Thus, nth full adder has to wait until all (n-1) full adders to complete their operations. This causes a delay and makes ripple carry adder extremely slow. The situation becomes worst when the value of n becomes very large. Can we overcome this disadvantage? If yes, explain the process in detail with relevant proofs. (C.O.No.3) [Comprehension Level]

Part C [Problem Solving Questions]

Answer all the Questions. Each question carries SIXTEEN marks. (2Qx16M=32M)

9. Apply Booth algorithm to multiply signed integers of 20 and -13. (C.O.No.3) [Application Level]

10. Explain the restoring division algorithm in computer arithmetic. Apply restoring division algorithm to perform A/B for the following number. A = 24, B = 4. (C.O.No.3) [Application Level]