PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech./Int. Btech Summer 2022 - 23 Examination

Semester: 4/3/8   Date: 27/03/2023
Subject Code: 203124209   Time: 02:00 pm to 04:30 pm
Subject Name: Computer Organization and   Total Marks: 60
            Microprocessor Architecture

Instructions:
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Objective Type Questions - (Fill in the blanks, one word answer, MCQ-not more than Five in case of MCQ) (All are compulsory) (Each of one mark)   **(15)**
1. What is the size of data bus in 8085 microprocessor?
2. How many bits are not used in flag register?
3. What is machine cycle?
4. What is an Assembler?
5. The operation code of ADD is 10000000. Find the Hex code instruction ADD B.
6. Calculate the number of chips required to design 8K-byte memory if the memory chip size is 1024 x 1.
7. Explain OUT instruction.
8. What is partial decoding of I/O devices?
9. Assume the accumulator holds FFH. Illustrate the difference in flag set by adding 01H and by incrementing the accumulator contents.
10. Explain DCX instruction.
11. What is a counter?
12. Explain RRC instruction.
13. Which instruction is used to mask RST 7.5, 6.5, and 5.5 interrupts?
14. What is a micro-operation?
15. Describe the control function with example in register transfer language.

Q.2 Answer the following questions. (Attempt any three)   **(15)**
A) Explain the flag register in detail.
B) Differentiate between peripheral-mapped I/O and memory-mapped I/O.
C) Draw and explain accumulator bit pattern of RIM Instruction.
D) Sixteen bytes of data are stored in memory locations at 2050H to 205FH. Write instructions to transfer the entire block of data to new memory locations starting at 2070H.

Q.3 A) Draw and explain timing diagram for MVI C, CCH.   **(07)**
B) Write an assembly language program to count the number of odd and even numbers from a block data having ten bytes from 2000H to 2009H.   **(08)**

OR

B) Write an assembly language program to add the positive numbers from a block of data having ten signed numbers from memory location 4000H to 4009H and display sum if less than FFH , if not then display FFH.   **(08)**

Q.4 A) Explain the stack in detail with role of PUSH and POP instructions.   **(07)**

OR

A) Describe shift micro operations with hardware implementation.   **(07)**
B) Explain different types of memory.   **(08)**