Paper Code   : ELL:506
Paper Name   : Electronics Lab III (Microprocessor Architecture and programming)

Assembly Language Program

- Write an ALP for Addition of two 8-bit numbers (data) Result (Answers) store into register D and Carry store into register C.

- Write an ALP for Multiplication of two 8-bit numbers (data) Result (Quotient) store in to register D and Remainder store in to register C.

- Write an ALP for Multiplication of two 8-bit numbers (data); Result (Answer) store in to register pair HL (Higher byte of answer in H-register & Lower byte of answer in D register)

- Write an ALP for Division of two 8-bit numbers (data); Result (Quotient) store in to register D and Remainder store in to register C.

- Write an ALP for ANDing of two 8-bit numbers (data); Store the answer in E-register.

  You can take any 8-bit data as a first data and find out the second 8-bit data, so the answer becomes as following.

    - Upper nibble of first data remains as it is and Lower nibble becomes zero.

    - Lower nibble of first data remains as it is and Upper nibble becomes zero.

    - First data

    - Zero

- Write an ALP for ORing of two 8-bit numbers (data); Store the answer in D-register.

  You can take any 8-bit data as a first data and find out the second 8-bit data, so the answer becomes as following.

    - Upper nibble of first data remains as it is and Lower nibble becomes FH

    - Lower nibble of first data remains as it is and Upper nibble becomes FH.

    - First data

    - FFH.

- Write and ALP for X-ORing of two 8-bit numbers (data); Store the answer in H-register.

  You can take any 8-bit data as a first data and find out the second 8-bit data, so the answer becomes as following

    - 1's complement of first data and

    - First data

- Write an ALP to convert a decimal number to its corresponding ASCII in 8085 microprocessor.

- Write an ALP for 8085 to seperate the nibbles of an 8 bit number.

- Write an ALP which are doing 1's compliment of given 10 Nos. of data – The first data is stored at memory location C500H.

- Write and ALP which are doing 2's compliment of given 10 Nos. of data – The first data is   stored at memory location D800H.

- Write an ALP for Addition of two 16-bit numbers (data); Result (Answer) store in to register pair PE (Higher byte of answer in D-register & Lower byte of answer in E-register) and Carry store in to register C. (Assignment: Also try using DAD Instruction)

- Write an ALP which are doing Multiplication by n power ot two (2^n) using RLC instruction and store the higher byte of answer in B-register and lower byte of answer in C-register.

- Write an ALP which are doing Multiplication by n power of two (2^n) using RAL instruction and store the higher byte of answer in H-register and lower byte of answer in L-register.

- Write an ALP which are doing Division by n power of two(2^n) using RRC instruction and store the Quotient in D-register and Remainder in E-register.

- Write and ALP which are doing Division by n power of two (2^n) using RAR instruction and store the Quotient in B-register and Ramainder in C-register.

- Write an ALP which is finding the given number is PRIME or not?

- Write an ALP for converting Packed BCD number to Unpacked BCD number.

- Write an ALP which is finding largest number from given ten numbers – the first number is stored at C700H.

- Write an ALP, which is finding smallest number from given ten numbers – the first number is stored at C700H memory location

- Write an ALP for converting an ASCII number to its corresponding Decimal number.

- Write and ALP, which finds the given number is ODD or EVEN parity, Find the total Nos. of 1's and store the total in B-register.

- Prepare some ALPs from Unit 3. (Not for University Examination)

Main Reference Books :

REFERENCE BOOKS:
- Microprocessor Architecture, Programming and Applications with 8085/8080A –Ramesh S. Gaonkar, Wiley Eastern Limited.
- Fundamentals of Microprocessor and Microcomputers--B.RAM, Dhanpat Rai Pub.
- The Intel Microprocessors 8086/8080, 186/286, 386, 486, Pentium and Pentium Pro Processor Architecture. Programming and Interfacing--Barry R. Brey, PHI.