BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION)

CLASS: BE   SEMESTER: V
BRANCH: CSE   SESSION : MO/2019

SUBJECT : EC4205 MICOPROCESSORS AND MICROCONTROLLERS

TIME: 1.5 HOURS   FULL MARKS: 25

INSTRUCTIONS:
1. The total marks of the questions are 30.
2. Candidates may attempt for all 30 marks.
3. In those cases where the marks obtained exceed 25 marks, the excess will be ignored.
4. Before attempting the question paper, be sure that you have got the correct question paper.
5. The missing data, if any, may be assumed suitably.

Q1. (a) What are microinstructions? How these instructions are generated in 8085? Why TEMP [3]
          register is connected bi-directionally with internal data bus of 8085?
     (b) What do you understand by FEO? Explain by giving suitable examples.   [2]

Q2. (a) Why flags are not affected in INX and DCX instructions?   [1]
     (b) What is the use of auxiliary carry flag? Differentiate between INR A and ADI 01H   [2]
          instructions.
     (c) Write a subroutine for BCD decrement and use it for converting a BCD number to binary (2)
          number which is stored at memory location 2400H. Store the converted binary number
          at 2401H.
Q3. (a) Explain the functions of RESETIN (active low) and READY (active high) pins of 8085. [1]
     (b) The ball by ball score of a batsman in a 50 over match is stored in location starting from [4]
          2400H. Runs scored by the batsman in a ball may be 00H, 01H, 02H, 03H, 04H, 05H or
          06H. If score is FFH then batsman is out in that ball, then WAP to store the following in
          BCD.
          i) Total ball faced by the batsman at 2600H onwards.
          ii) Number of fours and sixes hit by the batsman at 2800H and 2801H respectively.

Q4. (a) Explain LDA 2000H by giving suitable timing diagram.   [2]
     (b) 1000 bytes are arriving (Ls Bit first- Ms Bit last) at SID pin of 8085 at regular interval of [3]
          0.5ms. WAP to input them serially and store in memory location starting from 2500H.

Q5. (a) Interface 8K ROM and 2K RAM chips with 8085. What will be the starting addresses of [4]
          ROM and RAM? Justify the starting address of ROM.
     (b) What are the two functions for which a 'SIM' instruction is used?   [1]

Q6. (a) What is the use of INTR pin?   [1]
     (b) Write a program to input two blocks of data of 16 bytes each through port nos. 20H and [4]
          21H respectively using RST5.5 (for first block) and RST6.5 (for second block) interrupts
          and store them in two memory locations, one starting from 0C10H and the other starting
          from 0C30H. Disable the interrupts after all the bytes in the blocks are inputted.

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