

- Note: 1. All questions are compulsory with internal options.
2. Figures to the right indicate full marks.
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Q.1 Answer the following (any three) (15)

- (a) Draw pin diagram of 8085 microprocessor.
- (b) An accumulator contains data 95 and register B contains data AB what will be the value of flag register after execution of ADD B instruction.
- (c) Explain Stack pointer and program counter.
- (d) Explain following pins
 - i. ALE ii. INTR iii. AD7 – AD0 iv. X1-X2 v. HOLD
- (e) Explain Flag register of 8085 in detail.
- (f) Write a note on Hardware interrupts also give their vector addresses.

Q.2 Answer the following (any three) (15)

- (a) Explain LDA address / STA address instructions .
- (b) Explain Register addressing mode and Immediate addressing mode in detail.
- (c) List any five instructions of Data transfer group and Arithmetic group each.
- (d) Draw timing diagram for Opcode fetch machine cycle.
- (e) Write an assembly program to find 2's complement of an 8-bit Number stored at memory location D001. Store the result in memory location D002.
- (f) Explain any three logical instructions.

Q.3 Answer the following (any three) (15)

- (a) Write addressing modes of the following instructions.
 - a) MOV A,B b) ADD M c) LXI H,D001 d) LDA 5001 e)RRC
- (b) Draw timing diagram for memory read machine cycle.
- (c) Calculate time delay for given subroutine.
Delay :
 - MVI B , 25H
 - Back: DCR B
 - JNZ Back
 - RET
- (d) Explain Compare instructions.
- (e) Explain RRC and RLC instructions in detail.
- (f) Write an assembly language program to divide two 8bit , numbers stored at memory locations D001 and D002 , store quotient at D003 and remainder at D004.

Q.4 Answer the following (any three) (15)

- (a) Explain different available conditional loops along with instructions in the assembly language programming of 8085.
- (b) Explain RIM and SIM instructions in detail.
- (c) Design 8085 system having 8 KB EPROM using 4 KB chips and 16 KB RAM using 8 KB chips.
- (d) Explain CALL and RET instructions with diagram.

- (e) Write an assembly language program to add two 8 bit numbers stored at memory location D001 & D002 , store the answer at memory location D003 (Hex code of the program is not expected)
- (f) Write a note on PUSH and POP instructions.

Q.5 Answer the following (any three)

(15)

- (a) Write features of 8051 Microcontroller.
- (b) Draw Pin configuration of 8051 Microcontroller.
- (c) Explain alternate functions of port 3 of 8051.
- (d) Explain memory organization of 8051 microcontroller.
- (e) Explain with diagram EDLC.
- (f) Write a note on IDE with it's components.

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