

- Note:**
1. All questions are compulsory with Internal choice.
 2. Draw neat diagrams wherever necessary.
 3. Figures to the right indicate full marks.

- Q.1 Answer the following (any THREE) (15)**
- (a) Write a note on Hardware Interrupts.
 - (b) Draw Pin diagram of 8085 processor.
 - (c) Explain Instruction Register, Instruction Decoder and ALU.
 - (d) Explain Flag register of 8085.
 - (e) An Accumulator of 8085 Contains data 95 and register B contains data CD. What will be the content of flag register after execution of ADD B Instruction .
 - (f) Explain SID, SOD, ALE , S0 and S1 pins of 8085.
- Q.2 Answer the following (any THREE) (15)**
- (a) Write addressing mode of the following instructions.
i) ANI 25 ii) CMA iii) SUB B iv) MOV M, C v) LDA 5001
 - (b) Explain any three addressing modes of 8085 Microprocessor.
 - (c) Draw timing diagram of MVI B, 25 . Assume memory locations as needed.
 - (d) Explain RRC and RLC instructions in detail.
 - (e) Draw timing diagram of Opcode Fetch Machine cycle.
 - (f) Write assembly language program to find 2's complement of a number stored at memory location C201 , Store complemented number at C202.
- Q.3 Answer the following (any THREE) (15)**
- (a) Design a microprocessor system having 8 KB EPROM and 8KB RAM using 4 KB chips.
 - (b) Explain RIM and SIM instructions.
 - (c) Calculate the Time delay for given Sub-Routine.
MVI C, 25
BACK: DCR C
JNZ BACK
RET
 - (d) Write a note on PUSH and POP instructions.
 - (e) Explain following instruction.
i) NOP ii) HLT iii) PCHL iv) SPHL v) XCHG
 - (f) Explain JUMP instructions (conditional as well as unconditional).
- Q.4 Answer the following (any THREE) (15)**
- (a) Draw Pin diagram of 8051 Microcontroller also explain ALE and RESET pin .
 - (b) Write Features of 8051 microcontroller.
 - (c) Explain ALU , Register A and Register B of 8051 microcontroller.
 - (d) Explain Memory Organization of 8051 Microcontroller
 - (e) Explain Alternate Functions of Port 3 of 8051.
 - (f) Explain PSW of 8051 Microcontroller.

Q.5

Answer the following (any THREE)

(15)

- (a)** Write a note on tools of IDE.
- (b)** Explain factors to be Considered in selection of Controller.
- (c)** Describe EDLC.
- (d)** Design an 8051 based System having 8 KB EPROM using 4 KB chips and 16 KB RAM using 8 KB chips.
- (e)** Explain Hardware and Software Debugging.
- (f)** Explain Embedded Software Development Process.

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