Q1. Title: Data Transfer: Problem Statement 1: WAP to load the data bytes 55H, 66H, 77H, and 88H in Accumulator, Registers B, C, D and E and 16 bit data 1122H in HL pair.
// MVI A,55H // MVI B,66H // MVI C,77H // MVI D,88H // MVI E,88H // LXI H,1122H
Problem Statement 2: WAP to load the data bytes 55H, 66H, 77H, and 88H in memory locations C050,C051,C052 and C054.
// MVI A,55H // STA C050H // MVI A,66H // STA C051H // MVI A,77H // STA C052H // MVI A,88H // STA C054H
Q2) Title: Block transfer Problem Statement:2
(a)Copy in Forward Direction: // LXI H,C501H // LXI D,C601H // MVI C,05H // LOOP1: MOV A,M // STAX D // INX H // INX D // DCR C // JNZ LOOP1 // HLT
(b) Copy in Reverse Order // LXI H,C505H // LXI D,C601H // MVI C,05H // LOOP2: MOV A,M // STAX D // DCX H // INX D // DCR C // JNZ LOOP2 // HLT
Q3)Title: Arithmetic operations on 8 bits data
Problem Statement : WAP to perform Addition of two numbers stored in C501H and C502H. Place the result in C503 and C504H.
Addition // LDA C501H // MOV B,A // LDA C502H // ADD B // STA C503H // MVI A,00H // ADC A // STA C504H // HLT
Problem Statement: WAP to perform Subtraction of two numbers stored in C501H and C502H. Place the result in C503 and C504H
Subtraction // LDA C501H // MOV B,A // LDA C502H // SUB B // STA C503H // MVI A,00H // SBB A // STA C504H // HLT
Q4) Title: Addition of series of data bytes
Problem Statement: A series of 5 data bytes is stored in RAM locations starting at C501H. WAP to perform the addition of data bytes and save the result in C506 (sum) and C507
// LXI H,C501H // MVI C,05H // MVI D,00H // MVI E,00H // LOOP: MOV A,M // ADD E // MOV E,A // MVI A,00H // ADC D // MOV D,A // INX H // DCR C // JNZ LOOP // SHLD C506H // HLT
Q5)Title: Pairwise addition **Problem Statement:** 5 pairs of data bytes are stored in RAM locations starting at the address C501H. WAP to perform pairwise addition and save the result in same memory locations, i.e. sum replacing the first data byte and carry replacing the second one // LXI H,C501H // MVI C,05H // LOOP: MOV A,M // INX H // ADD M // MOV M,A // MVI A,00H // ADC A // DCX H // INX H // MOV M,A // INX H // DCR C // JNZ LOOP // HLT
Q6)Title: Identify largest number
Problem Statement: A series of 10 data bytes is stored in RAM locations starting at C501H. WAP to identify largest number from the series, and place it C600H LXI H, C501H // MVI C,09H // MOV A, M // INX H // LOOP: CMP M // JC SKIP // MOV A, M // SKIP: INX H // DCR C // JNZ LOOP // STA C600H // HLT
Q7)Title: Data Transfer Problem Statement: WAP to load the data bytes 55H, 66H, 77H and 2501H in Accumulator, registers R0, R1 and DPTR respectively MOV A, #55H // MOV R0, #66H // MOV R1, #77H // MOV DPTR, #2501H.
Arithmetic operations on 8 bits data Problem Statement: WAP to perform Addition and Multiplication Of two numbers stored in 2501H and 2502H. Place the result in 2503 and 2504H. give this question in paragraph format
MOV DPTR, #2501H // MOVX A, @DPTR // MOV R0, A // INC DPTR // MOVX A, @DPTR // MOV R1, A // MOV A, R0 // ADD A, R1 // MOV DPTR, #2503H // MOVX @DPTR, A // MOV A, R0 // MOV B, R1 // MUL AB // MOV DPTR, #2504H // MOVX @DPTR, A // END
Q8) **Title:** Addition of series of data bytes
Problem Statement: A series of 5 data bytes is stored in external RAM locations starting at 2501H. WAP to perform the addition of data bytes and save the result in 2506 (sum) and 2507 (carry)
MOV DPTR, #2501H // CLR A // MOV R2, #05H // MOV B, #00H // BACK: MOVX A, @DPTR // ADD B // MOV B, A // JNC SKIP // INC R7 // SKIP: INC DPTR // DJNZ R2, BACK // MOV DPTR, #2506H // MOV A, B // MOVX @DPTR, A // INC DPTR // MOV A, R7 // MOVX @DPTR, A // END
Q9) **Title:** Pairwise addition
Problem Statement: 5 pairs of data bytes are stored in internal RAM locations starting at the address 25H. WAP to perform pairwise addition and save the result in same memory locations, i.e. sum replacing the first data byte and carry replacing the second one. MOV R0, #25H // MOV R2, #05H // LOOP: MOV A, @R0 // INC R0 // ADD A, @R0 // MOV @R0, C // DEC R0 // MOV @R0, A // INC R0 // INC R0 // DJNZ R2, LOOP // END
Title: To count number of negative data bytes.

	Q10)Problem Statement: A series of 10 data bytes is stored in external RAM locations starting at 2501H. WAP to perform to count number of negative data bytes and save the result (count) in internal RAM location with address 25H MOV DPTR, #2501H // MOV R2, #0AH // MOV R1, #00H // CLR A // MOV R0, #25H // LOOP: MOVX A, @DPTR // JB ACC.7, INCR // SJMP NEXT // INCR: INC R1 // NEXT: INC DPTR // DJNZ R2, LOOP // MOV A, R1 // MOV @R0, A // END **Q11)Title:** To swap the nibbles **Problem Statement:** A series of 10 data bytes is stored in external RAM locations starting at 2501H. WAP to perform to swap the nibbles of the data bytes and save the result in same memory locations. MOV DPTR, #2501H // MOV R2, #0AH // LOOP: MOVX A, @DPTR // ANL A, #0F0H // SWAP A // MOV R3, A // MOVX A, @DPTR // ANL A, #0FH // ORL A, R3 // MOVX @DPTR, A // INC DPTR // DJNZ R2, LOOP // END **Q12)Title:** Data Transfer (even numbers only) **Problem Statement:** A series of 10 data bytes is stored in external RAM locations starting at 2501H. WAP to identify and transfer even data bytes in internal RAM locations starting at 25H, while rejecting odd numbers. MOV DPTR, #2501H // MOV R0, #25H // MOV R1, #0AH // NEXT: MOVX A, @DPTR // ANL A, #01H // JNZ SKIP // MOVX A, @DPTR // MOV @R0, A // INC R0 // SKIP: INC DPTR // DJNZ R1, NEXT // END **Q13)Title:** Identify largest number **Problem Statement:** A series of 10 data bytes is stored in external RAM locations starting at 2501H. WAP to identify largest number from the series, and place it in internal RAM location 25H MOV DPTR, #2501H // MOV R1, #09H // MOVX A, @DPTR // INC DPTR // AGAIN: MOVX B, @DPTR // INC DPTR // CJNE A, B, CHECK // SJMP NEXT // CHECK: JC NEXT // MOV A, B // NEXT: DJNZ R1, AGAIN // MOV 25H, A // END