05 Interface stepper motor to 8086 using 8255 and write assembly language program to rotate in clock wise direction in half stepping.

→ 8255 is interfaced with 8086 in I/O mapped I/O. Port C (PC_0, PC_1, PC_2, PC_3) is used to give pulse sequence to stepper motor. The 8255 provides very less current which will not be able to drive stepper motor coils so each of the winding of a stepper motor needs to be interfaced using high speed switching Darlington transistors with max 1A, 80 V rating with heat sink, with the output port of 8255. Output the sequence in correct order to have the desired direction to rotate the motor.

PROGRAM -

```
MODEL SMALL
.STACK 100
.DATA
PORTA EQU FFC0H; PORTA ADDRESS
PORTB EQU FFC2H; PORTB ADDRESS
PORTC EQU FFC4H; PORTC ADDRESS
CWR EQU FFC6H; CONTROL PORT ADDRESS
PHASEC EQU 03H
PHASEB EQU 06H; SEQUENCE IN SERIES TO ROTATE
 MOTOR
PHASED EQU 0CH; IN CLOCKWISE DIRECTION
PHASEA EQU 09H
.CODE
 START:
MOV AL,@DATA
MOV DX,CTL
```

```
OUT DX,AL
AGAIN:
MOV AL, PHASEC
MOV DX, PORTC
OUT DX, AL
MOV CX, 0FFFFH
 UP:
 LOOP UP

MOV AL, PHASEB
MOV DX, PORTC
OUT DX, AL
MOV CX, 0FFFFH
 UP1:
 LOOP UP1

MOV AL, PHASED
MOV DX, PORTC
 OUT DX, AL
 MOV CX, 0FFFFH
 UP2:
 LOOP UP2

MOV AL, PHASEA
MOV DX, PORTC
 OUT DX, AL
 MOV CX, 0FFFFH
UP3:
LOOP UP3
JMP AGAIN; REPEATE OUTPUT SEQUENCE
 INT 03H
 END START
```