

### Unit - III

5. a) Differentiate between followings : (4,2,2,2=10)
- SIM and RIM instructions.
  - Vectored and Non-vectored Interrupts.
  - Maskable and Non-maskable Interrupts.
  - Hardware and Software Interrupts.
- b) Explain the followings with examples : (3×2=6)
- Stack
  - Subroutine
6. a) Write an assembly language program to ADD a memory block of 10 bytes starting from 2000 H and store the sum in the memory at 200F H location. If carry generated, store the carry at 2010 H location. (8)
- b) With the help of block diagram explain features of 8259 programmable interrupt controller and write how it can be programmed? (8)

### Unit - IV

7. a) List the major components of 8279 keyboard/display interface and explain their functions. (8)
- b) Design a square wave generator with a pulse width of 100  $\mu$ s by using 8254 timer. Set the timer in mode 3. The clock frequency is 3 MHz. (8)
8. a) Draw block diagram of 8255 and explain its various modes of operations. (8)
- b) An 8255 is interfaced in memory mapped I/O so that its address range is 8000H to 8003H.

Frame the control word for the following configuration :

- Port A : Input in mode - 0  
Port B : output in mode - 0  
Port C<sub>u</sub> : I/p  
Port C<sub>l</sub> : O/p

Write instructions to initialize the 8255. (8)

### Unit - V

9. a) Briefly describe the communication standards RS232C and IEEE 488 by showing configurations. Write merits and demerits and explain their significance. (8)
- b) With the help of block diagram explain USART 8251 in detail. (8)
10. Write short notes on :
- Interfacing a matrix keyboard using 8255.
  - 8085 MPU Design. (8×2=16)