Subject: Microprocessor architecture and programming Topic : Pin out diagram of 8085 Name of Teacher: Simna v j Academic year: 2020-2021

## MPR

TOPIC : pin diagam of 8085

## intel 8085

☆ it is an 8 bit general purpose microprocessor
☆ introduced by intel in 1977
☆ it has 40 pins and need +5 V single power supply

## 8085 architecture

Architecture consists of
pin out diagram
functional block diagram







## pin out diagram

All signals can be classified into 6 groups
☆ Address bus
☆ Data bus
☆ control and status signals
☆ power supply and frequency signals
☆ Externally initiated signals
☆ serial input or output port

## 1.Address bus

☆ There are 8 dedicated address lines (A15- A8) to transmit most significant 8 bits of 16 bit address and least significant eight bits of address is transmitted on the 8 lines on which data is transmitted (A7-A0)

## 2.Data bus

☆ it is used both as low order address bus as well as data bus in time mutiplexed mode

## **3.control and status signals**

☆ ALE(Address latch enable)

when it goes high it indicate that the bits on AD7- AD0 are address bits

☆ RD(Read)

This active low signal indicate that the selected memory or I/o devices is to be read

#### ☆ WR(Write)

#### It indicate that the data on data bus is to be written on to selected memory location or I/o device

#### ☆ Io /M(input output /memory)

- it is used to differentiate between I/o and memory operation.
- when it is high it indicate I/o operation and when low,then memory operation

# ☆ S1 and S0(Bus state indicator)it indicate type of machine cycle in progress

s1		
0		
0		
1		
1	1	fetch

## 4. Externally initiated signals

#### ☆ TRAP(input)

it is a non maskable RESTART interrupt and has highest priority

☆ RST5.5, RST6.5, RST 7.5(h/w vectored interrupt request)

it transfer the program control to a specific memory location .priority order 7.5,6.5,5.5 ☆ INT R (Interrupt request)

it is used as general purpose interrupt and has least priority among interrupts

☆ INTA(interrupt acknowledgement)

it is made active by processor to acknowledge the device that CPU has recognised interrupt through INTR and need operation code to proceed further

#### $rac{d}{d}$ HOLD

indicate that an external device is requesting the use of the address and data buses

☆ HOLDA(Hold acknowledgement)

indicate that the CPU has received the HOLD request and that it will relinquish the bus in the next clock cycle ☆ RESET IN(System reset)

when it is low then program counter is set to 0, and buses are tristated and microprocessor is reset

☆ RESET OUT(pheripheral reset)it indicate that microprocessor is being reset

### serial I/O port

 ☆ SID and SOD( serial input data, serial output data)
 in serial transmission data bits are sent over single line, one bit at a time