

## Computer peripheral & interfacing

### Set-1

- ① Define computer peripheral interfacing with example?
- ② Compare port address I/O and memory mapped I/O on the basis of address length, control signal and instruction?
- ③ Can it be IN 30H and then OUT 30H?  
Explain your answer?
- ④ What do you mean by odd address bank and even address bank of 8086 processor?
- ⑤ Discuss port address I/O and memory mapped I/O with control signal and instruction.
- ⑥ If the clock frequency is 5MHz.  
how much time is required to execute the instruction of 18 T-states

### Set-2:

- ① What happens when a microprocessor is interrupted?
- ② Difference between absolute address decoding and partial address decoding
- ③ Define instruction cycle, machine cycle, and T-state?
- ④ What is ALE? Discuss how low address bus of 8086 is demultiplexed using ALE signal?
- ⑤ Discuss how a byte and word data is read from odd boundary address and an even boundary address?
- ⑥ Draw the circuitry to interface eight dip switches using a 74LS138 decoder and 74LS244 buffer and a 74LS373 latch under memory mapped I/O

set-3

- ① Draw and discuss timing waveform to execute the instruction OUT 01H.
- ② Discuss how 8085 is interfaced with
  - ① a common anode seven segment LED to display the digit 7.
  - ② a safety control system for home appliances through an input port and output port?

#### Set-4

① Discuss why and how handshake signals are used to interface I/O device with processor?

② Describe 8086 vectored interrupts?

③ What do you mean by maskable and non-maskable interrupts?

④ Can the microprocessor be interrupted before the completion of the first interrupt service routine?

⑤ Discuss how time delay is calculated using loop within loop technique with a counter value of FFFFH?

⑥ State the name of different flag of 8085 microprocessor?

⑦ Why do we use buffer with input device and latches? ⑧ Describe the delay calculation using register pair?



① Discuss why  
are used to interface 16  
process. B see interrupts?

② Der ① Difference between

③ W ① maskable and non maskable interrupt?

and ② vectored and non vectored interrupt?

④ c ② What is timer? Write the control word  
format of 8253/8155 programmable interval  
timer?

⑤ ③ Discuss a squarewave generator with a  
pulse width of 100μs by using 8155 timer  
set up the timer in mode 1 if clock  
frequency is 3MHz.

④ Discuss about successive-Approximation A/D  
converter?

⑤ Design a 1-minute timer using a 60Hz  
power line as an interrupting source.  
The output display minutes and seconds  
in BCD. At the end of the minute,  
the output port should continue displaying  
One minute and zero second.

set-4

① Discuss why and how handshake signals are used to interface I/O device with

⑥ Write a main program to count continuously in binary with a one second delay between each count and write a service routine at XX70 to flash FFH five times when the program is interrupted, with some appropriate delay between each flash?

⑦ Draw and describe the functional diagram of 8257 Dma controller.

⑧ Discuss the role of RS232 interface in detail?

⑨ What is programmable device (1 marks) <sup>2</sup><sub>m</sub>

⑩ What is DMA? What are uses of DMA?

⑪ Discuss 8255A control word format for I/O modes and BSR mode.

⑫ Draw and discuss the block diagram of 8254 programmable interval timer?

⑥ ... a main ... with a ...

⑬ Discuss the ports and modes of 8255A programmable peripheral interface device?

⑭ What is programmable peripheral interface device? Discuss about I/O ports of 8155 PPI.

⑮ Design an output port with address FFH to interface the 1488 D/A converter that is calibrated for 0 to 10V range. Write a program to generate a continuous ramp waveform?