(104-262) WK 16

13 WEDNESDAY • APRIL

S M T W T F S
1 2 3 4 5
6 7 8 9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28 29 30 31

MAR 16

Section - 6

Q1 Explain minimum operating modes of 8086 microprocessor. Explain the maximum operating modes of 8086 Microprocessor.

Ans) Minimum Mode, 8086 is the only processor in the system. The Minimum mode circuit of 8086 is as shown below: Clock is provided by the 8284 clock generator, it provides CLK, RESET and READY input to 8086 Address from the address bus is latched into 8282 8-bit latch.

(i) 8086 works in Minimum Mode, when MN/$\overline{MX}$=1

(ii) Minimum Mode, 8086 is the only processor in the system. The Minimum Mode circuit of 8086 is as shown below:

(iii) Clock is provided by the 8284 Clock generator it provides CLK, RESET and READY input to 8086.

(iv) Address from the address bus is latched into 8282 8-bit latch. Three such latches are needed, as address bus is 20-bit. The Ale of 8086 is connected to STB of the latch. The ALE for this latch is given by 8086 itself.

M T W T F S S
30 31 1
M 2 3 4 5 6 7 8
A 9 10 11 12 13 14 15
Y 16 17 18 19 20 21 22
16 23 24 25 26 27 28 29

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APRIL • THURSDAY 14

• The Maximum operating modes of 8086 Microprocessor.

In Minimum mode there can be only one processor i.e 8086 in maximum mode there can be multiple processor with 8086 like 8087 & 8089... ALE for the latch is given by 8086 as it is the only processor in the circuit ALE for the latch is given by 8288 bus controller as there can be multiple processors in the circuit.

(i) In Maximum mode there can be multiple processors with 8086 like 8087 & 8089.

(ii) MN/$\overline{MX}$ is 0 to indicate maximum mode.

(iii) ALE for the latch is given by 8288 bus controller as there can be multiple processors in the circuit.

(iv) DT/$\overline{R}$ for the trans-receivers are given by 8288 bus controller.

(v) Instead of control signals, each processor generates status signals called $S_2, S_1$ $S_0$.