

Section-02

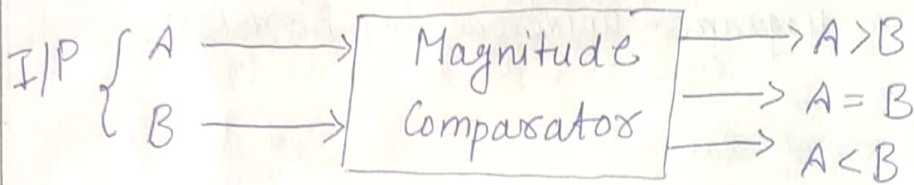
Q.1

Ans:-

A Magnitude Comparator is a Combinational circuit designed primarily to compare the relative magnitude of the two binary numbers A and B.

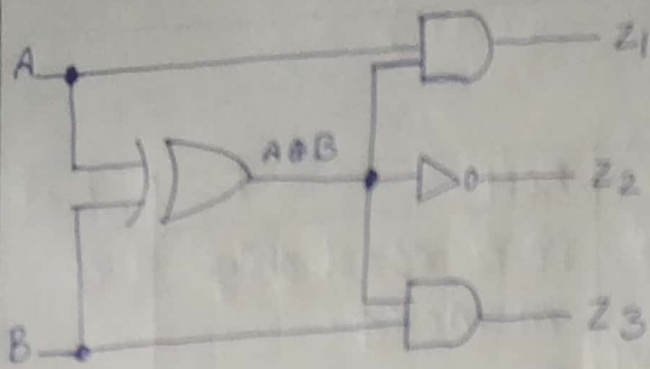
② Naturally, the result of this comparison is specified by three binary variables that indicates, whether $A > B$, $A = B$ or $A < B$.

③ The block diagram of a magnitude comparator.



④ EX-NOR and AND gate is used to implement the circuit. if the EX-NOR gate and two AND gates are combined, the circuit will function as a single bit magnitude comparator.

⑤ The circuit diagram and truth table of a magnitude comparator is shown.



Inputs		Outputs		
A	B	Z ₁	Z ₂	Z ₃
0	0	0	1	0
0	1	0	0	1
1	0	1	0	0
1	1	0	1	0

Z₁ is high when $A > B$

Z₂ is high when $A = B$

Z₃ is high when $A < B$

The same concept is adopted to form an n-bit magnitude comparator.