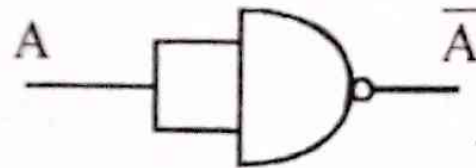


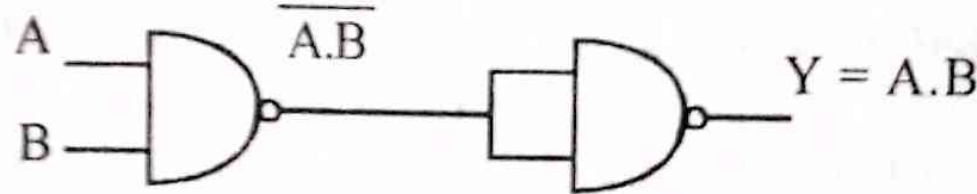
## 2.10 Universal Gates

NAND and NOR gates are called universal gates because both can be used to implement any gate like AND, OR and NOT gates or any combination of these basic gates. Figure 2.13 shows how a NAND gate can

NOT Gate



AND Gate



OR Gate

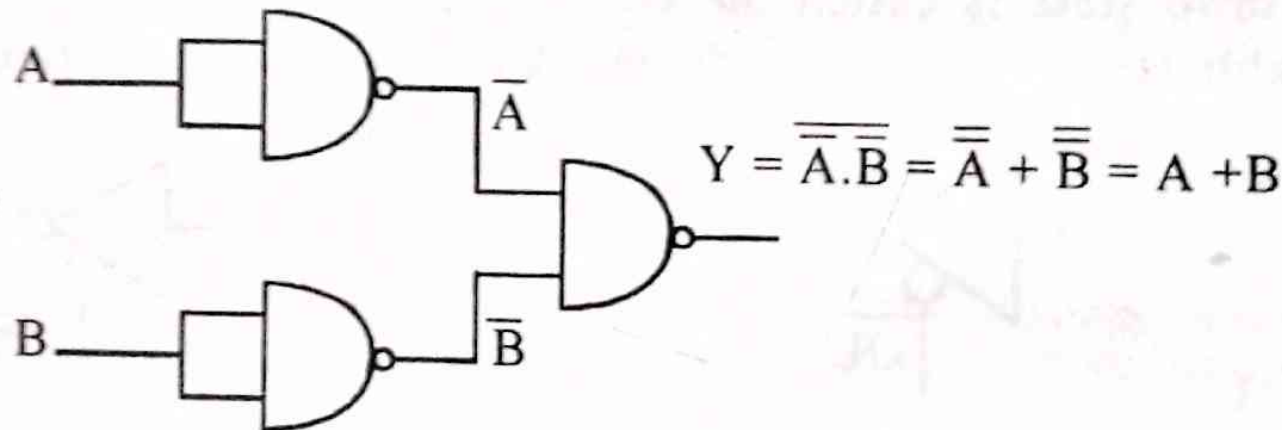
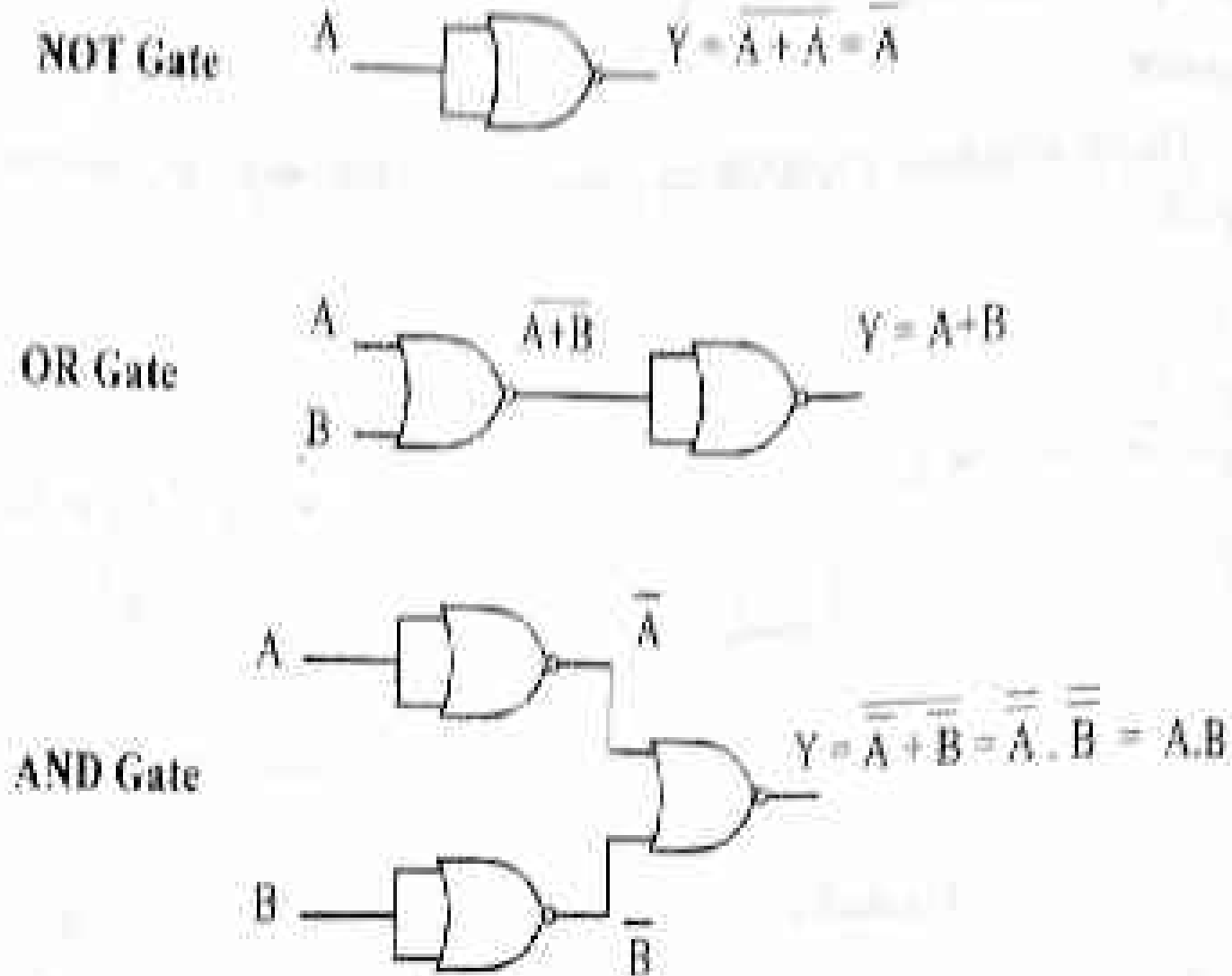


Fig. 2.13 Basic Gates constructed using NAND gates

be used to realize various logic gates while Figure 2.14 shows how a NOR gate can be used for the same.



**Fig. 2.14** Basic Gates constructed using NOR gates