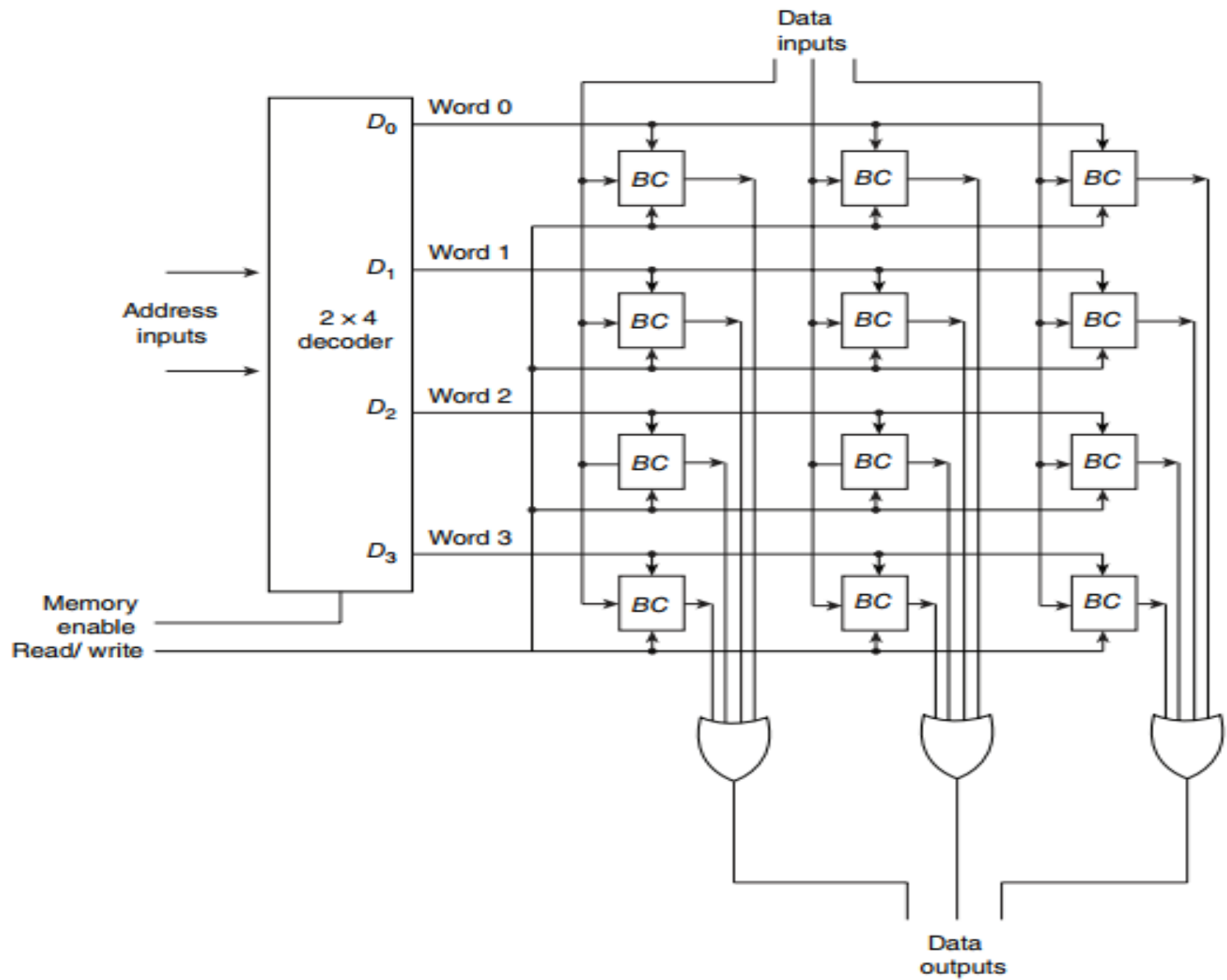
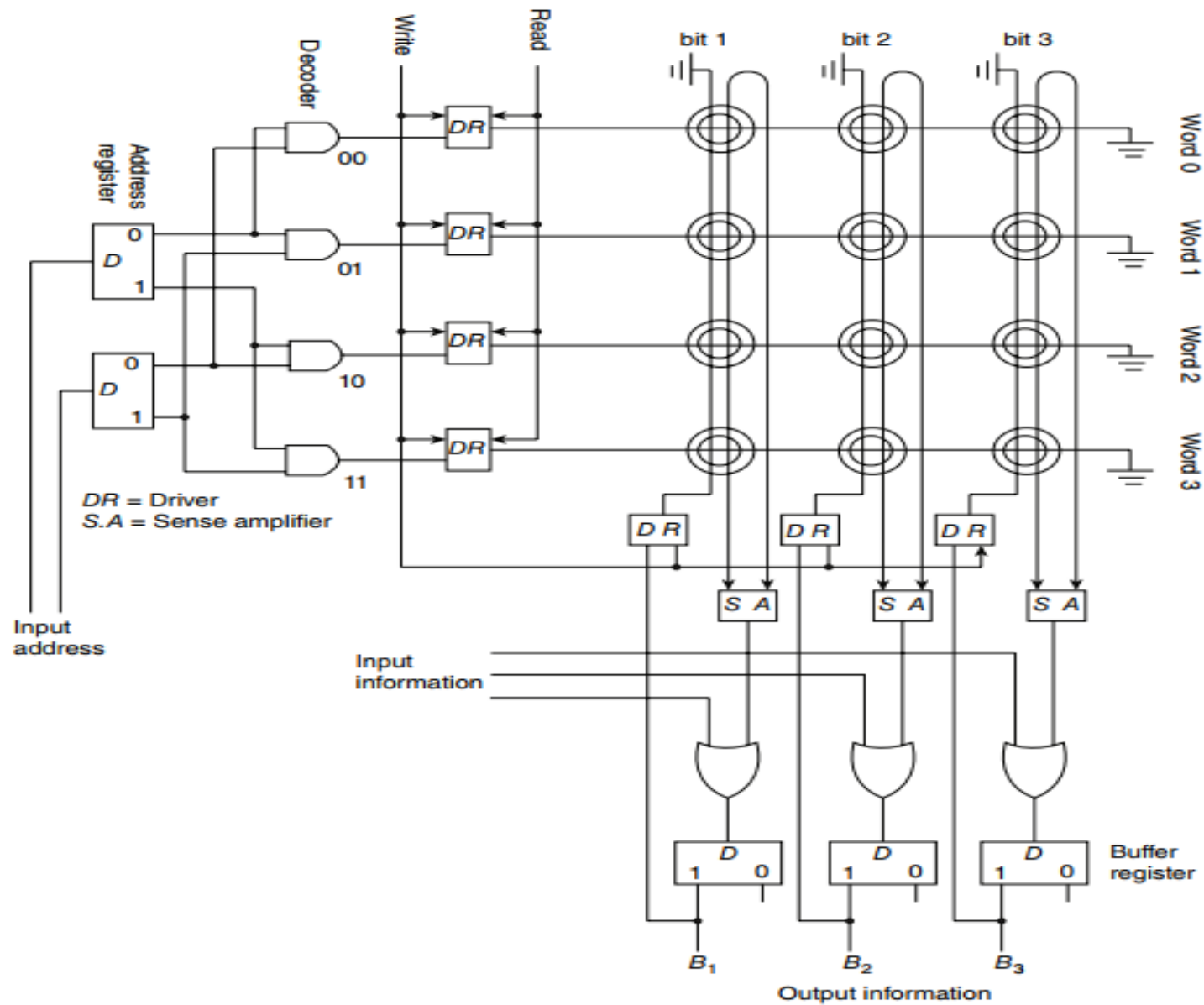


# THE MEMORY UNIT

Prepared by: Lec Tasmiah Tamzid Anannya, CSE Dept, MIST





# Communication Between MP and Memory

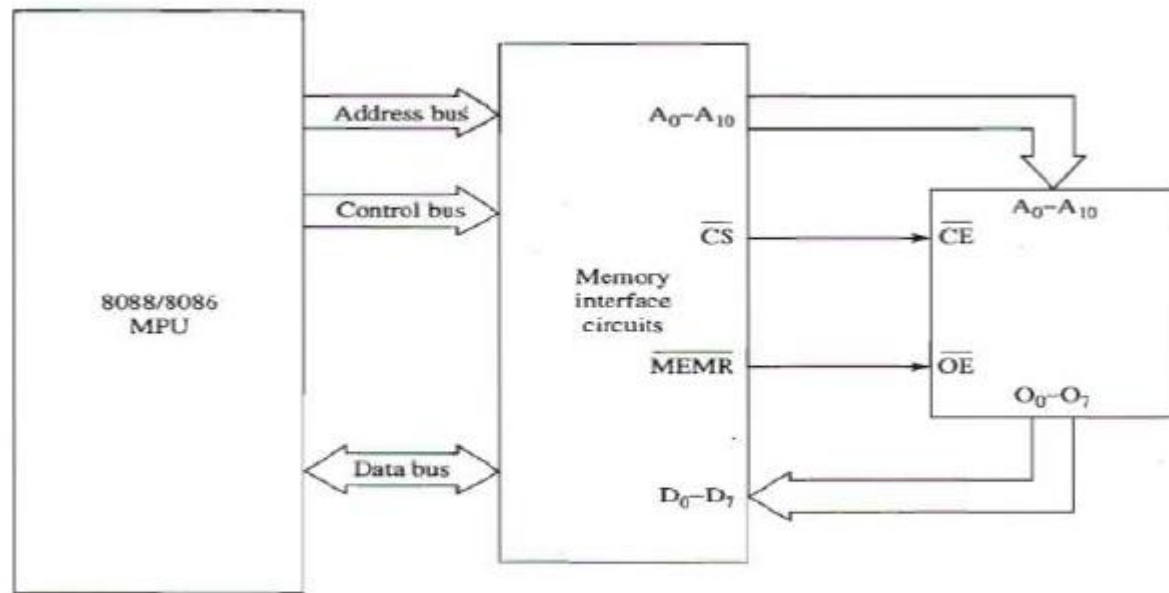


Fig: Read only memory interface

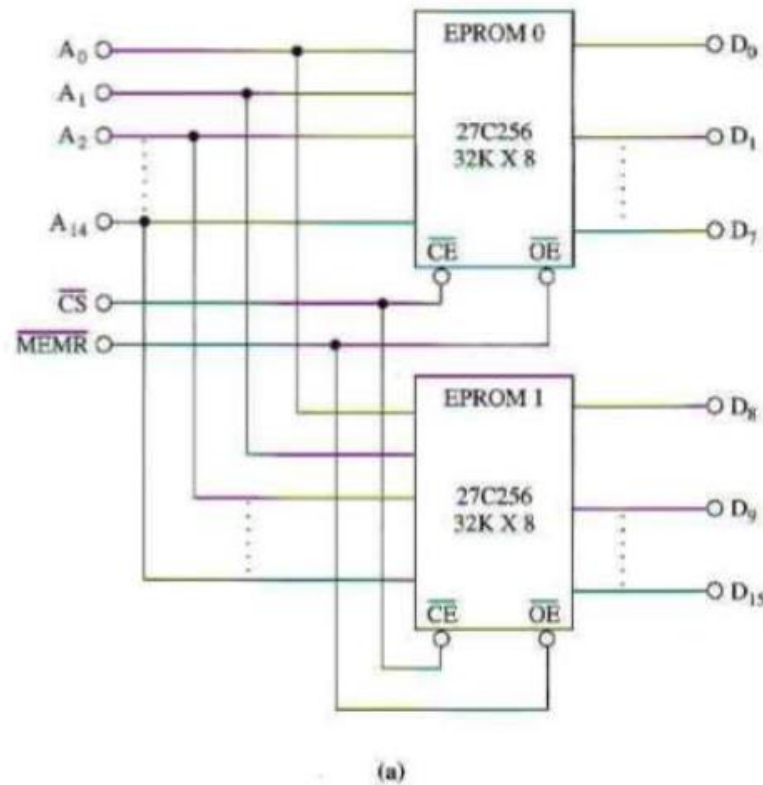
# Communication Between MP and Memory

- By applying the address of a storage location to the address inputs of the ROM, the byte of data held at the addressed location is read out onto the data lines.
- The block diagram in Fig. shows that the data bus consists of eight lines labeled as  $O_0$  through  $O_7$ . Here  $O_7$  represents the MSB and  $O_0$  the LSB. For instance, applying the address  $A_{10} \dots A_1 A_0 : 10000000000_2 : 400_{16}$  will cause the byte of data held in this storage location to be output as  $O_7 O_6 O_5 O_4 O_3 O_2 O_1 O_0$ .

# Expanding Word Length and Word Capacity

- In many applications, the microcomputer system requirement is for ROM/RAM are greater than what is available in a single device.
- There are two basic reasons for expanding EPROM capacity:
  - first the byte-wide length is not large enough;
  - And, second, the total storage capacity is not enough bytes.
- Both of these expansion needs can be satisfied by interconnecting a number of ICs.

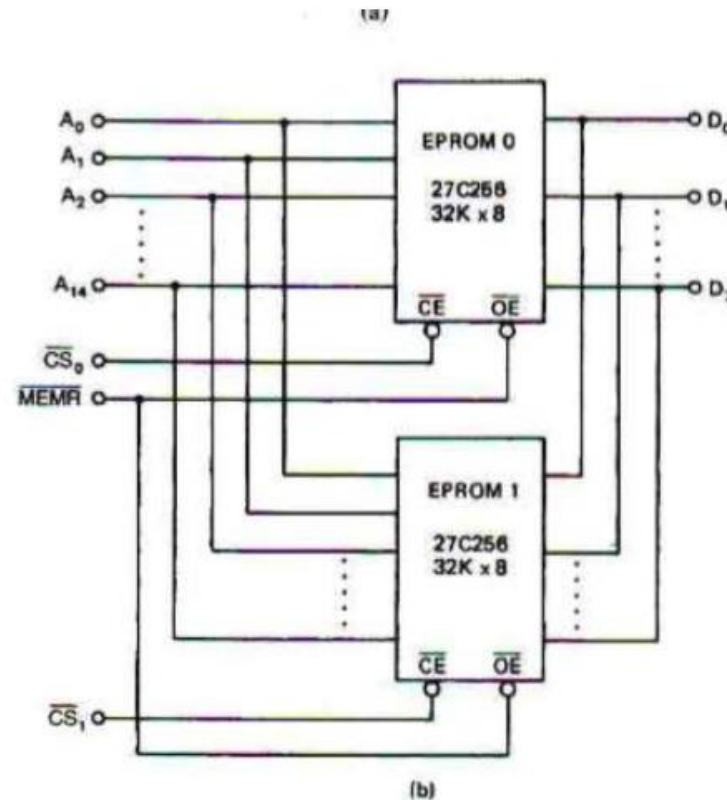
# Expanding word/byte length



Two 32Kx8 ROMs together create 32Kx16 ROM

Fig: Expanding word length

# Expanding word capacity



Two 32Kx8 ROMs  
together create 64Kx8  
ROM

Fig: Expanding word capacity