

✓  
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\* Memory organizations:-

Que If a computer has 15 bits of address line then the memory unit has \_\_\_\_\_ memory locations.

- ✓ (a) 32768       $2^{15} = 32768$   
(b) 32769       $2^{15}$   
(c) 32767  
(d) 32000

Que How many address inputs are required to access 256 byte memory  
 $2^8$  bits.      1 byte = 8 bits

Que Addressing of 32K x 16 memory is realized using a single decoder the minimum no. of and gates requires for decoder are \_\_\_\_\_

- ✓ (a)  $2^{15}$        $32K \times 16$   
(b)  $2^{19}$        $2^{15} \times 16$   
(c)  $2^{32}$   
(d)  $2^8$

Que A memory system of size 16K bytes having 8 data bits is required to design using memory chips which have 12 address lines & 4 data lines each then the no. of such chips required to design 2 memory is \_\_\_\_\_

Required =  $\frac{16K \times 8}{4K \times 4}$

MPMDW 11.0 - 4K x 4

Que

Total 16 memory chips are used to design  $32K \times 16$  memory. What will be the actual size of memory chip?

- ✓ (a)  $32K \times 1$   
(b)  $2K \times 8$   
(c)  $4K \times 16$   
(d)  $32K \times 2$

$$\begin{array}{r} 8 \quad 4 \\ 32K \times 16 \\ \hline 4K \times 4 \end{array} = 32$$

Another Ans r

- $8K \times 4$
- $4K \times 8$
- $2K \times 16$
- $1K \times 32$

Que f

consider a memory chips with 24 address bits & 16 data pins. How many such memory chips can be used to design a  $64K \times 64$  memory?

- (a) 4  
(b) 8  
(c) 16  
✓ (d) none of these

$$\begin{array}{r} 4 \\ 64K \times 64 \\ 2^{24} \times 16 \\ \hline 2^{10} \\ 2 \times \\ 64K \times 64 \\ \hline 10+10+4 \\ 2 \times 16 \\ \hline 1K \cdot 1K \cdot 2^4 \end{array}$$

The no. of bits needed for addressing of memory having size  $2^k \times 8$  design using 4 memory chips of  $1K \times 4$ .

$$\frac{2^k \times 8}{1K \times 4} = 4$$

$$2^k = 2K$$

$$2^k = 2 \times 2^{10}$$
$$2^k = 2^{11}$$

$$\boxed{k = 11}$$