

4)

log. add = 32 bit,

Page size = 4KB,

Page table entry = 4 bytes

Process size = ?

Page table size = ?

Process size =  $2^{32} \text{ B} = 4 \text{ GB}$ No. of entries in PT =  $\frac{\text{Process size}}{\text{Page size}}$ 

$$= \frac{4 \text{ GB}}{4 \text{ KB}} = \frac{2^{32}}{2^{12}} = 2^{20}$$

=  $2^{20}$  Pages.

$2^{10} = 1 \text{ KB}$
$2^{20} = 1 \text{ MB}$
$2^{30} = 1 \text{ GB}$

P.T size = No. of entries in PT  $\times$  Page T entry size

=  $2^{20} \times 4$

$$= 4 \text{ MB}$$

5)

phy. Mem = 64 MB.

log. add. = 32 bit.

Page size = 4 KB

Page table size = ?

Process size =  $2^{32} = 4 \text{ GB}$ .No. of entries =  $\frac{\text{Process size}}{\text{Page size}}$ 

$$= \frac{4 \text{ GB}}{4 \text{ KB}} = 2^{20} \text{ pages}$$

PT size = No. of entries  $\times$  PT entry size

$$\text{PT size} = 2^{20} \times ?$$

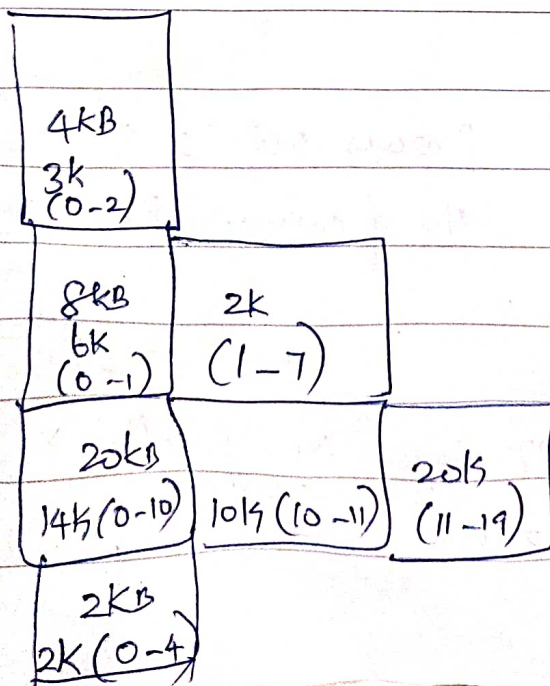
$$\text{No. of bits in phy. add} = 64\text{MB} = 2^{26} \text{ bits} \\ = 2^{26} \text{ bits}$$

$$\text{No. of frames} = \frac{\text{Main Mem Size}}{\text{Frame Size}}$$

$$= \frac{64\text{MB}}{4\text{KB}} = \frac{2^{26}}{2^{12}} = 2^{14} \\ = 16384$$

$$\text{P.T size} = \text{No. of pages} \times \text{No. of bits in frame} \\ = 2^{20} \times 14 \\ \approx 2^{20} \times 16 \\ = 2^{20} \times 2 \text{ bytes}$$

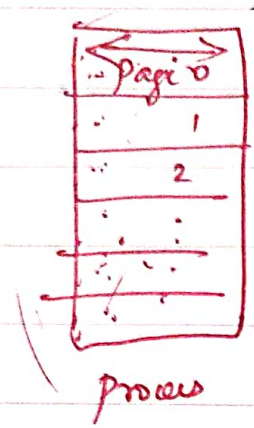
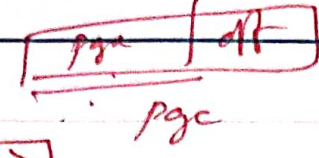
$$\boxed{\text{P.T size} = 2\text{MB}}$$



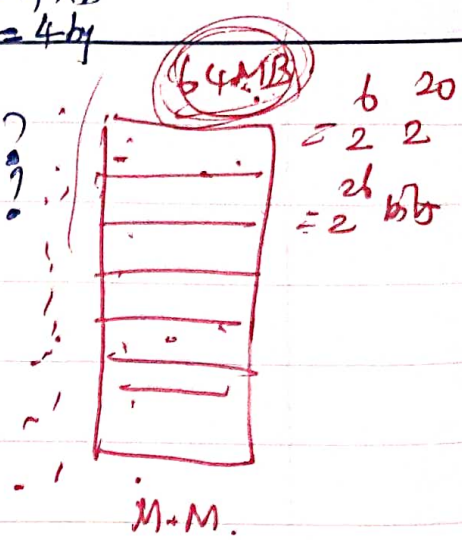
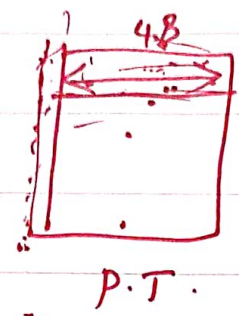


CPU  $\rightarrow$  log. add = 32

Logical addr = 32 bit  
 Page size = 4 Kb  
 page table = 4 by  
 entry size



Find process size?  
 page table size?



Process size =  $2^{32}$   
 $= 2^{30} \times 2^2$   
 $= 4 \text{ GB}$

$2^{10} = 1 \text{ KB}$   
 $2^{20} = 1 \text{ MB}$   
 $2^{30} = 1 \text{ GB}$

No. of pages =  $\frac{\text{Process Size}}{\text{Page size}}$   
 $= \frac{4 \text{ GB}}{4 \text{ KB}} = \frac{2^{30}}{2^{10}} = 2^{20}$

No. of pages = 2  
 No. of bits in page = 20 bits

PT size =  $2^{20} \times 4 \text{ B}$   
 $= 1 \text{ MB} \times 4 \text{ B}$   
 $= 4 \text{ MB}$