

Quiz 3A

رقم الشعبة: 2

الرقم التسلسلي:

الاسم:

Instructions: Time 10 minutes. Closed books and notes. No calculators. Please answer all problems in the space provided. **No questions are allowed.**

<Good Luck>

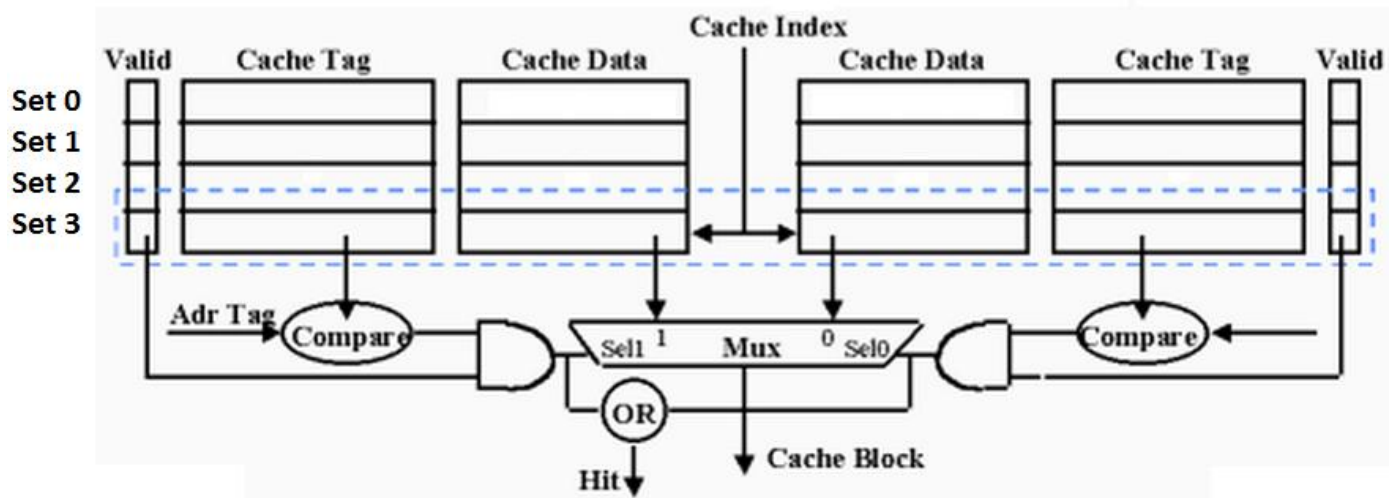
Q1. Draw a 2-way set associative cache that has 4 sets and each block is one word long. Your drawing should show the hit circuit and the widths of the index and tag lines.

Cache Index Width = \lg_2 (No. of Sets) = $\lg_2 4 = 2$ bits

<1 mark>

**Tag Width = 32 – cache index width – block offset width
= 32 – 2 – 2 = 28 bits**

<1 mark>



<3 marks>

Q2. Calculate the capacity of a hard disk that has 4 double-sided disks. Assume that the disk has 128K cylinders and each track can hold 1 MB of data?

**Capacity = No of tracks * track capacity
= 8 surfaces * 128 K cycliners * 1 MB
= 1024 GB = 1 TB**

<2 marks>

<3 marks>