

King Fahd University of Petroleum and Minerals  
College of Computer Sciences and Engineering  
Department of Computer Engineering

**COE 308 – Computer Architecture (T032)**

**Homework # 03 (due date: Monday 29/03/2004)**

**\*\*\* Show all your work. No credit will be given if work is not shown! \*\*\***

**Problem # 1:** Consider a computer system that has a cache consisting of 128 blocks. The MM contains 256K blocks, each consisting of 32 words. Answer the following assuming (i) fully associative cache, (ii) direct cache, then (iii) set associative with sixteen-block sets:

1. How many bits are needed for the MM address?
2. How many bits are needed for each of the TAG, SET, and WORD fields?

**Problem # 2:** Solve problem 3.5 from the textbook.