

# COE 205 : Computer Organization & Assembly Language

## Quiz on CPU Design – Solution

- a. (10 pts) Draw the data path of a single-bus CPU design with 4 general-purpose registers

**See the notes**

- b. (5 pts) Write the fetch control sequence for fetching an instruction from memory

**T1          PCout, MARin, Read, ALU (C=B+1), Zin**

**T2          Zout, PCin, WMFC**

**T3          MDRout, IRin**

- c. (5 pts) Write the execution control sequence for executing: SUB R3, R1

**T4          R3out, Yin**

**T5          R1out, ALU (C=A-B), Zin**

**T6          Zout, R3in, END**