

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