NATIONAL UNIVERSITY
of Computer & Emerging Sciences, Lahore

Department of Computer Science

EE204 – Computer Architecture

Time : 20 minutes

Name _____, Roll #: _____

Quiz 2

Imagine a pipelined system with five stages. Each stage has the following processing time for the lw instruction (4 marks)

	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
Load Word	100 ps	50 ps	100 ps	90 ps	50 ps

Imagine that the lw instruction executes 10, 000 times. Assume that none of the types of hazards exist in the system. You must however cater for the time to fill the pipeline.

1. What is the total execution time of 10, 000 lw instructions in the single cycle system? (1 marks)	
2. What is the total execution time of 10, 000 lw instructions in the pipelined system? (1 marks)	
3. What is the effective speedup? (1 marks)	
4. Once the pipeline is filled and operating at its optimal levels, what is the throughput of the pipelined system? (1 marks)	

18th Oct 2018