EE204 Computer Architecture Quiz #1 Fall 2018



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| Name: |  | Total Time: 20 Mins |
| Student ID: |  | Total Marks: 10 |

Q1. Choose the correct option/options **(8 Marks)**.

1. Two processors A and B have clock frequencies of 700 Mhz and 900 Mhz respectively. Suppose A can execute an instruction with an average of 3 steps and B can execute with an average of 5 steps. For the execution of the same instruction which processor is faster?

**a) A**

b) B

C) Both take the same time

d) Insufficient information

1. The ultimate goal of a compiler is to \_\_\_\_\_\_\_\_

a) Reduce the size of the object code

b) **Reduce the clock cycles for a programming task**

c) Be versatile

d) None of these

1. If a processor clock is rated as 1250 million cycles per second, then its clock period is \_\_\_\_\_\_\_\_

a) 1.9 \* 10-10 sec

b) 1.6 \* 10-9 sec

c) 8 \* 10-9 sec

**d) 8 \* 10-10 sec**

1. RISC \_\_\_\_\_\_\_\_\_

a) Hardware Oriented

**b) Required Effort of programmer**

c) Small code sizes

d) All of above

1. By keeping the number of instruction and clock rate constant, we can say that smaller the CPI faster will be the system.

**a) True**

b) False

c) Cannot define speed just by analyzing CPI

1. ILP \_\_\_\_\_\_\_\_\_\_

a) Software Oriented.

b) Uses Vector Architecture.

**c) Speculative execution.**

d) None of these.

1. Which class/classes of computer must be predictive and responsive

**a) Embedded**

b) Desktop

**c) PMD**

d) Servers

1. Lesser the MTTF, less will be the failure rate

a) True

**b) False**

c) Has no relation between MTTF and failure rate

Q2. What is Flynn's Taxonomy, briefly describe each class of it. (**2 Marks**)

**Flynn's taxonomy** is a classification of [computer architectures](https://en.wikipedia.org/wiki/Computer_architecture)

**Single instruction stream single data stream (SISD)**

A sequential computer which exploits no parallelism in either the instruction or data streams.

### Single instruction stream, multiple data streams (SIMD)

It represents the organization of a single computer containing a control unit, processor unit and a memory unit. Instructions are executed sequentially. It can be achieved by pipelining or multiple functional units

### Multiple instruction streams, single data stream (MISD)

Multiple instructions operate on one data stream. This is an uncommon architecture.

### Multiple instruction streams, multiple data streams (MIMD)

Multiple autonomous processors simultaneously executing different instructions on different data.