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
2. 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
3. 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
4. RISC _____
   a) Hardware Oriented
   b) Required Effort of programmer
   c) Small code sizes
   d) All of above
5. 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
6. ILP _____
   a) Software Oriented.
   b) Uses Vector Architecture.
   c) Speculative execution.
   d) None of these.
7. Which class/classes of computer must be predictive and responsive
   a) Embedded
   b) Desktop
   c) PMD
   d) Servers
8. 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

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.