Question 1:

T / F CPU performance is indirectly proportional to the system clock frequency.

Question 2:

T / F CISC architectures are more suitable for portable electronic devices than RISC.

Question 3:

T / F Processors with faster clock rates will always be faster.

Question 4:

T / F "Y is p% faster than X" = Time of X / Time of Y = 1 + p/100.

Question 5:

Given the importance of registers, what is the rate of increase in the number of **registers** in a chip over time?

A. very fast: They increase as fast as Moore's Law, which predicts doubling the number of transistors on a chip every 18 months. (True if “number of transistors)

B. Very slow: Since programs are usually distributed in the language of the computer, there is inertia in instruction set architecture, and so the number of registers increases only as fast as new instruction sets become viable.

Question 6:

Select the three basic building blocks of computers:

Computation, Communication, Storage

Question 7:

A microprocessor clocked at the rate of 2.0 GHz has a clock cycle time of \_\_\_\_\_. (4ns / 2ns / 0.5ns / 1ns)

Question 8:

CPU time = (Instructions/Program) × (Cycles/\_Instruction\_) × (Seconds/Cycle).

Question 9:

Which speedup could be approximately achieved according to Amdahl's law for infinite number of processors if 5% of a program is sequential and the remaining part is ideally parallel?

(Infinite speedup / 5 / 20 / 50)

Question 10:

A given application written in Java runs 15 seconds on a desktop processor. A new Java compiler is released that requires only 60 percent as many instructions as the old compiler. Unfortunately, it increases the CPI by 10 percent. How fast can we expect the application to run using this new compiler?

(15 x 0.6) / 1.1 = 8.2 sec

15 x 0.6 x 1.1 = 9.9 sec

(15 x 1.1) / 0.6 = 27.5 sec