**Name:** **Id#**

# COE 308, Computer Architecture, Term 982
## Quiz# 4

Date: Wednesday, May 19

**Q1.** Suppose that a microprocessor takes 800ns to execute a task. How many processors are needed to execute the task in 100ns assuming that only 10% of the task cannot be executed in parallel. Assume that the communication overhead is negligible. What is the minimum time possible for executing this task assuming the use of as many processors as needed.

**Q2.** A multiprocessor system has 10 processors. The probability that a processor makes a request is 0.25. It is required to design the system using a crossbar switch such that the probability of accepting an arbitrary request is 0.9. Determine the minimum number of memory modules necessary to satisfy this requirement.

**Q3.** Briefly describe Flynn`s classification for computer systems.

**Q4.** Separate the following Pascal nested loop into independent loops which can be executed on different processors simultaneously:

```
For I := 2 To 12 Do
   For J := 1 To 10 Do
        X[I] := X[I+J] * X[I];
```