1. Briefly explain the following terms.
   a. Dual Core
   b. Hyperthreading
   c. MIMD
   d. Array Processor
   e. Interleaved Memory
   f. Reservation Station
   g. RAW hazard
   h. RAS/CAS
   i. Set Associative Memory
   j. Flash RAM

2. Draw an Omega network that connects 8 CPUs to 8 memories.

3. Explain what happens during a USB transaction that reads a block of data from a device end-point.

4. Draw a picture of a MOSFET and explain how it works.

5. Explain the structure of the following network topologies. How many connections per CPU are required?
   a. Hypercube
   b. Ring
   c. Bus
   d. Fully connected (Dedicated path between each pair of CPUs)

6. What is a Beowulf cluster and how does it work?

7. What are the advantages and disadvantages of compressing memory/cache? Is it worth it to do so?

8. What is Amdahl’s law? Is there any way to mitigate its effects?