CP 5152 Advanced Computer Architecture

Important 13 Mark Questions

Unit I

1. Describe the issues to be considered in Measuring reporting and summarizing performance.
2. Explain the concepts and challenges in ILP.
3. Discuss how hardware-based speculation is used to overcome control dependence.
4. Explain Instruction Delivery and Speculation in detail with necessary diagrams.
5. Explain Multithreading in detail with examples.

Unit II

1. Explain different memory technologies and optimization techniques in detail.
2. Explain design of memory hierarchies with a neat diagram.
3. Examine the role of advanced memory optimization on the performance of cache.
4. Explain the virtual memory translation and TLB with necessary diagram.
5. Describe the various cache hit time reduction techniques for improving the cache performance.

Unit III

1. List out the different memory consistency models. Explain each model with necessary examples and diagrams.
2. Explain Distributed Shared memory architecture in detail.
3. Illustrate the implementation of various symmetric shared memory architecture.
4. What is the need for Interconnection networks? List the different types and explain any two interconnection networks in detail.
5. Describe the implementation of directory- based cache coherence protocol.

Unit IV

1. Explain in detail about Intel multicore architectures with a block diagram.
2. Explain about Google Warehouses and scale computer.
3. Describe the architecture of the IBM cell processor in detail.
4. State and explain the requirements and characteristics of warehouse scale computers.
5. Compare SMT and CMP architectures.

Unit V

1. What are the steps involved in detecting and enhancing loop level parallelism? Explain.
2. Describe about vector processor architecture and GPGPU computing.
3. Describe the primary components of the instruction set architecture of VMIPS and explain the basic vector architecture with neat block diagram.

4. List any five double-precision floating-point VMIPS vector instructions and explain its functions.
5. Discuss the similarities and differences between the following:
   (a) Vector architecture and GPUs.
   (b) Multimedia SIMD computers and GPUs.