**QUESTION BANK**

**Class: M.Sc II sem**

**Subject: Computer Architecture & Organization**

 **Unit I:**

1. What is addressing mode? Explain direct and immediate addressing mode with suitable Example.
2. What is instruction? What are its types? Explain each one with its formats.
3. What is hardware and software? What are their roles in computer design? Explain how they interact with each other.
4. What are the different layers in computer architecture? Explain each in brief.
5. What is an instruction? What are its types? Explain the most common field found in an instruction format.
6. Explain instruction and execution cycle in detail.
7. Explain the role of hardware and software in computer design.

**UNIT II:**

1. Explain control path design in detail.
2. What is a superscalar processor? Explain its architecture in brief. What are its advantages?
3. Explain any one method of hardwired control unit design in detail.
4. What is RISC and CISC ? Differentiate between RISC and CISC and give their advantages and disadvantages.
5. Explain the design of micro programmed control unit.
6. Describe the importance of superscalar processor in detail.
7. Explain the concept of pipelining in CPU design in detail. What are its advantages?
8. Discuss control path design in detail.

**UNIT III:**

1. Explain memory hierarchy in detail.
2. What is virtual memory? Explain the concept of segmentation and paging in detail.
3. Design a 1024×8 memory using 256×8 chips. Use suitable decoder to address it.
4. What is cache memory? Explain. What are its advantages?
5. What is storage device? Explain the different storage technologies with an example. Also give the advantages of each.
6. Explain memory array organization in detail.
7. What is virtual memory? Explain the concept of paging and segmentation in brief.
8. What is cache memory? What are its advantages? Draw the basic structure of cache memory and explain it in brief.
9. What is memory array organization? Explain.

**UNIT IV:**

1. What is interrupt? What are its types? Explain step wise actions which take place when I/O device interrupt the CPU.
2. What is Benchmark? What are its uses? Explain SPEC marks in brief.
3. What are the different data transfer techniques? Explain any one with suitable block diagram.
4. What is BUS? What are its types ? Explain role of BUS in data transfer in brief.
5. What is PCI bus ? Explain the role of PCI bus in computer system organization.
6. What is benchmark? Describe the benchmark programme and its advantages.
7. Explain the vectored interrupt scheme in detail.
8. What is DMA? What are its advantages? Explain the cycle-stealing mode of operation of DMA in brief.
9. Write short notes on Transaction Processing Benchmarks.