COA important short questions

Module 1

1. Basic functional units in a computer (I/O, Memory, ALU, CU) see notes
2. Addressing modes with examples
3. Auto increment and decrement addressing modes with examples
4. Registers that are connected to both external and internal buses and the signals associated with these registers (MAR, MDR)
5. Steps involved in the execution of an instruction
6. Three, two, and one-address instructions with examples
7. What is Wait-for-Memory-Function-Completed (WMFC)
8. Big-endian and little-endian byte ordering with examples
9. Condition codes (same as status bits in the status register in module 2)

Module 2

1. Two port memory and scratch pad memory
2. Register transfer logic with examples
3. Arithmetic, logic, and shift micro-operation with examples.
4. Accumulator register with diagram and explanation
5. Explain about true/complement circuit (see assignment 1)

Module 3

1. M x N Array multiplier
2. Booth multiplication algorithm
3. Integer division algorithm
4. Short note on the control word
5. Pipelining types and hazards

Module 4

1. Hardwired and microprogram control logic
2. Types of control organizations (one flip-flop per state, sequence register and decoder, PLA control, microprogram control methods with diagram and brief explanation)
3. Differentiate between horizontal and vertical microinstructions

Module 5

1. Static RAM and Dynamic RAM comparison
2. SRAM and DRAM with diagram and explanation
3. Memory-mapped I/O and I/O mapped I/O
4. Cycle stealing DMA and burst mode DMA
5. Content Addressable Memory (CAM)
6. Cache hit and cache miss