| Finalterm Exam (5th Semester, Fall 2023) | Marks: 50 |
| Paper: CSE-304 Computer Organization and Architecture | Time: 2 Hours |

Note: Attempt all questions briefly and precisely on the answer sheet, be specific.

Question No. 1 (Marks=8)

What is the handshaking concept in the Central Processing Unit (CPU)? Explain it with the architecture and signals required.

Question No. 2 (Marks=8)

What is the difference between a data register and an address register? How these two registers are related to memory (RAM)?

Question No. 3 (Marks=8)

How does HALT instruction work in the CPU? Explain in terms of clock cycles required for fetching an instruction from RAM and executing it.

Question No. 4 (Marks=8)

What is the difference between JUMP instruction and CALL-RETURN instruction? Explain in terms of CPU registers involved in the instructions.

Question No. 5 (Marks=8)

What is the difference between Rotate Accumulator Left and Right with carry and without carry instructions?

Question No. 6 (Marks=10)

How do the carry flag and sign flag work with the CPU's arithmetic and logic unit (ALU)? How does extended instruction work in the CPU? Explain with examples.