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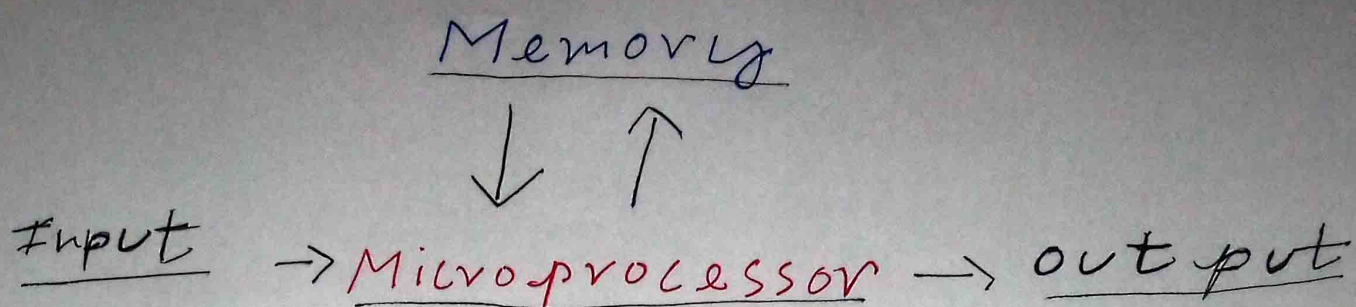
Course code CSE 413

Course title Microprocessor and
Interfacing

Dept of CSE/CSIT

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Bangladesh

Ans 1) a) Block diagram of a basic Microcomputer



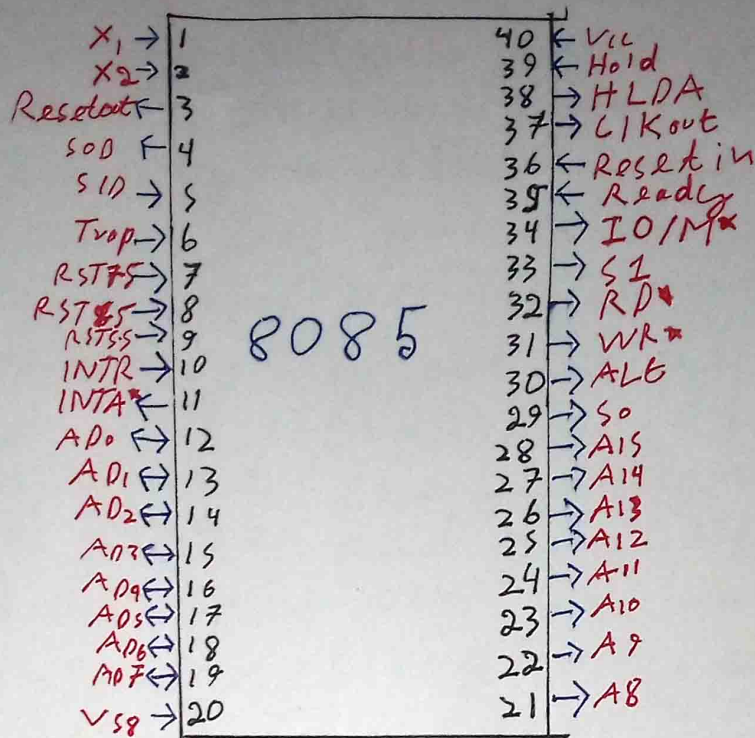
Ans 1) a) Microprocessor has following features —

High speed: Due to technology involved in it the microprocessor can work at very high. It can execute millions of instructions per second.

Low cost: Due to integrated circuit technology microprocessors are available at very low cost. Microprocessor reduce the cost of a computer system.

versatility: Microprocessors can be deployed for multiple purposes by simply configuring the software in them.

Ans 1) b)



Ans 1) c) There are four types of microprocessors —

- 1) RISC processors.
- 2) CISC processors.
- 3) VLIW processors and
- 4) Superscalar processors.

Ans 2) a) Initially when any device has to send data between the device and the memory the device has to send DMA request (DRQ) to the DMA controller. The DMA controller sends Hold request (HRQ) to the CPU and waits for the CPU to assert the HLDA.

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Ans 2) b) The 8257 works in two modes slave mode and master mode. Similarly the processor also work in two modes active mode and hold mode. The processor is normally in active mode. In the active mode, the processor is the master of the computer system, including the 8257 only when direct memory access transfer is required to be performed, the processor goes to hold state and gives up control of the system bus. In such a state the processor is logically ~~disconnected~~ disconnected from the rest of the computer system and the 8257 becomes the master for the rest of the computer system. 8257 also control direct memory access. 8257 generate peripheral request which allows the device to transfer the data directly to memory without any interference of the CPU.

Ans 3) a) The rotate instruction shifts all bits in the register or memory operand specified. The carry flag (CF) is included in the rotation. Shift instruction allow the bits of a register or memory byte to be shifted one bit place to the left or to

Ans 3) a) To the right. The branch instructions are used to change the sequence of instruction execution.

Ans 3) b) Memory stores program, I/O interfaces are the medium in which data are sent from internal logic to external sources and from which data are received from external sources.