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9.5 Suppose you wish to send a block of data to a tape drive for storage using DMA. What information must be sent to the tape controller before the DMA transfer can take place?
Ans - Prior to the Direct Memory Access, or DMA, information is provided to the controller, and this information transfer procedure is divided into five steps.
1) The position in the memory block where the data or information is to be kept.
2. The location of the data on the tape, or where it should be.
The quantity of information conveyed, or 3.
4. Which way will the information be transferred, from the tape to the memory or from the memory to the tape?
5. The precise time the transfer will occur.
The programmed output codes are used to transmit the commands to the tape controller.

9.7 What is polling used for? What are the disadvantages of polling? What is a better way to perform the same job?
Ans - When there are no interruptions available, polling is primarily utilized to detect the Input/Output devices that need close attention. Additionally, the process of polling involves the controlling device waiting for an external device to check the condition, typically using low-level hardware. Given that it is short-driven instead of interrupt-driven, it may be more effective.
Disadvantages:
1) If there are too many devices to test, polling will take longer than it will provide service to each input/output device.
2) It is necessary to apply a second transmission since some devices' standby times are less than the interval.
3) Another term for this is polling, which describes a situation in which a device is continuously checked for availability, and if it is not, the computer switches to another task or duty. This is often less effective than the alternative to polling, interrupt-driven I/O, despite not wasting as many CPU cycles as busy waiting.

Chapter 9 Calculation Exercise ”If my CPU runs at 4.0GHz, and on average takes 10 clock cycles to complete an instruction, how many instructions will be completed in the time it takes to type "MY CPU IS RUNNING NOW"? Assume it takes 5 seconds to type the message. Show your work and how you arrived at the solution”.
Ans - 4.0 GHz (Cycles/sec) * (1 instruction / 10 Cycles) * (5 Sec) = 2,000,000,000 Instructions.