Step 1

Device polling: the process of periodically checking the status of an I/O device to determine the need to service the device. The polling is simplest way for an I/O device to communicate with the processor.

Step 2

a) Video Game Controller: This application not used polling techniques because Signals from the controller must be handed immediately for satisfactory interaction

Step 3

a) Computer Monitor: This application is using the polling techniques.

Step 1

Interrupt-driven communication involves devices raising interrupts when they require attention and the CPU processing those interrupts as appropriate. While polling requires a process to periodically examine the state of a device, interrupts are raised by the device and occur when the device is ready to communicate. When the CPU is ready to communicate with the device, the handler associated with the interrupt runs and then returns control to the main process.

Step 2

a) Video Game Controller: It is an input from controller generates interrupts handled by the controller driver.

Step 3

b) Computer Monitor: It uses the interrupt–driven communication. The polling is suitable.

Step 1

a) Video Game Controller :

The video game controller is an input device. It has four buttons, a joystick and a rocker. Each button can be in either an on or off position. The joy stick generates nine 1 byte values that indicate relative position as a vector from the origin at the center of the controller. And the rocker state is expressed as 4 bits, one bit for each of the four directions.

Step 2

b) Computer Monitor:

A computer monitor is an output device that requires memory based on the number of pixels available for output.

Step 1

a) Video Game Controller :

The video game controller is an input device.

A controller for video games includes a mechanism for recording, storing and retrieving a sequence of instructions. When playing a relatively complex game involving a relatively complex sequence of instructions which are used repetitively, these instructions need be entered only once and can be retrieved as required.

The video game controller has four buttons, a joystick and a rocker. The joy stick generates nine 1 byte values that indicate relative position as a vector from the origin at the center of the controller. And the rocker state is expressed as 4 bits, one bit for each of the four directions.

Step 2

b) Computer Monitor:

A computer monitor is an output device. This requires memory based on the number of pixels available for output. A single command can be implemented that sends an image to be displayed to the interface card. Alternatively, it could send a pointer to the image rather than the image itself.

Step 1

Yes, I/O system can be combination of both.

Memory-mapped I/O – some memory addresses are reserved for I/O module registers, and communication from the CPU to memory & I/O is generic

Memory-mapped is cheaper because of the need for fewer control lines takes away some memory addresses so those memory locations are never used

A graphics card is an excellent example. A memory map can be used to store information that is to be displayed. Then, a command used to actually display the information. Similar techniques would work for other devices from the table.