

## 1 QUESTION 1

They have different structures inherently that they can't be used interchangeably. We explain some of the characteristics of Latches:

Latches have the following attributes and functionalities:

1. Outputs need to be consistent over a time period. So latches use **D-FF** to implement this characteristic.
2. In order to capture input and persist output latches need to use a control signal.

Buffers have the following attributes and functionalities:

1. Buffers are used to guarantee the power of the signal and to further amplification if required.
2. They are used to make the output signal robust.

As you can see they are different and have different use cases. So they can't be used interchangeably.

## 2 QUESTION 2

In polling you keep checking for the event you want to occur. But in the interrupt mode you should only do the job you want when the event occurs you'll be informed about it and the program stops resuming and starts executing the interrupt routine. In this mode you don't have to constantly poll for the event to occur.

## 3 QUESTION 3

Yes, you can. By first polling the device with more priority and then checking for the other you can apply priority to output devices.

## 4 QUESTION 4

The only register that Atmega16 stores is the current address. It only stores PC.