**CAP5415**

**Computer Vision**

**Fall 2022**

**Homework 2**

**Question 1:** Both correlation and convolution can be used for filtering operation. However, no matter what the filter is, the result of filtering using correlation can never be same as filtering using convolution.

**Answer: False**

**Explanation: In some cases filtering using correlation and convolution can be same.**

**Questions 2:** Sampling and quantization refer to the same step in digitization.

**Answer: False**

**Explanation: For digitizing an image we need to go through two steps: first sampling then quantization. So they are different.**

**Questions 3:** Sampling and quantization both are required for image digitization.

**Answer: True**

**Explanation: Yes, for image digitization we need both sampling and quantization.**

**Questions 4:** Quantization will determine the resolution of the digitized image.

**Answer: False**

**Explanation: Quantization determines the number of grey levels in the digitized image.**

**Questions 5:** It is not possible to apply more than 1 filter on the same image.

**Answer: False**

**Explanation: We can apply many filters or kernels on the same image, for example in CNN we set ‘k’ value which represents kernels or filters.**