

# Digital Image Processing

## Practical Exam

### 1. Image Processing

- (1) Show the original image 'lenna.tif'



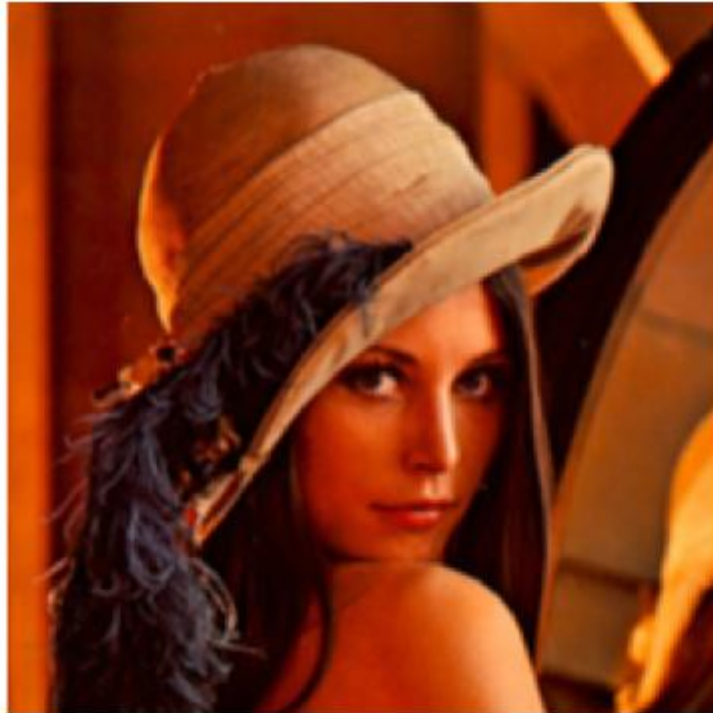
- (2) Display three components of RGB in one figure



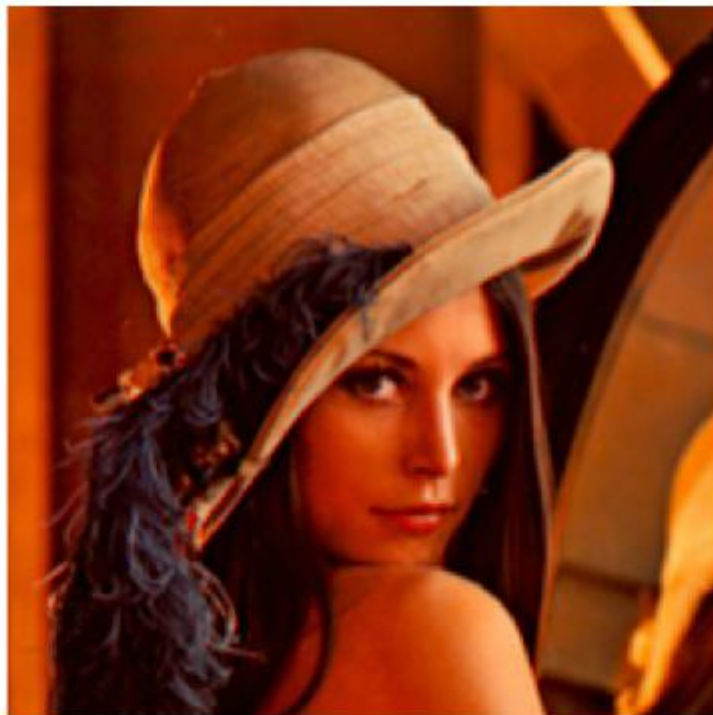
- (3) Display three components of HSI in one figure



- (4) Smooth each component image of the RGB image independently using  $5 \times 5$  spatial averaging mask, and combine the individually smoothed images to form the smoothed, full-color RGB result.



- (5) A) Smooth only the intensity component of the HSI image using  $5 \times 5$  spatial averaging mask and convert the processed result to an RGB image.



- B) Show the difference between the two smoothed images.



2. Draw the following function in one figure shown below

$$x(t) = \sum_{k=1}^{20} \frac{1}{k} \sin \frac{k\pi}{2} \cos \frac{k\pi t}{2}$$

where,  $-5 \leq t \leq 5$

