Department of Physical Science

Faculty of Applied Science

University of Vavuniya

In-course Assessment Examination - 01

IT3143 (P) - Digital Image Processing (Practical)

26th-Sep-2025 **Time allowed – 45 minutes**

Instructions:

- *Save your file with your registration number (for e.g. 2021ICTXX) in Z drive.*
- *Find all the resources in the folder IT3143-Resources.*
- *You should use MATLAB programming language to write the programs.*

1. Consider the RGB image *onion.png*. Develop a method to improve the contrast of the image by following steps in MATLAB:
    a. Read and display the original image.
    b. Extract the red, green, and blue channels from the given image. Display each channel separately.
    c. Convert the original RGB image into a grayscale image. Save this output as *Image1*.
    d. Generate a random (synthetic) image of the same size as *Image1*, naming it *Image2*.
    e. Add *Image1* and *Image2* and display the result.

2. Consider the images ‘toycars1.png’ and ‘toycars2.png’ and display the outputs in subplots:
    a. Read and display the original images.
    b. Change the original images to a grayscale images and display them.
    c. Define a function *SubtractTwoImages* that should input two images as parameters to subtract one image from another (without using any predefined MATLAB Function).
    d. Subtract the grayscale image *toycars1* from *toycars2* using the function *SubtractTwoImages* and vice versa.