**AI341 – Deep Learning Lab**

**Open-Ended Lab (OEL): 23rd Dec 2022**

**Fall 2022 – BS(AI)**

Instructor: Ms. Abinta Mehmood Mir

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ; Reg. No.:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Allocated Time: 120 minutes Marks: 20**

**Statement**

***Generative adversarial networks (GANs)*** are algorithmic architectures that use two neural networks, pitting one against the other (thus the “adversarial”) to generate new, synthetic instances of data that can pass for real data. They are used widely in image generation, video generation and voice generation.

A simple GAN is first constructed for you (given python notebook) with only hidden dense layers and tries to output meaningful images. Your first task is to run the given code and analyze discovering one issue which is commonplace in simple GANs.

After that you need to resolve this issue in the next part with one GAN ***called Deep Convolution Generative Adversarial Networks (DCGANs).***

***Note: All the necessary details and basic code is given in the provided python notebook.***

***Evaluation will be done according to following points:***

1. Understanding and model building
2. Understanding and analyzing the results and outcomes
3. Code is in running form without any errors
4. Output in the form of some evaluation metrices