Date: 06/06/2025	Test - 2	Max. Marks: 50+10
Semester: VI	UG	Duration: $1\frac{1}{2}$ Hrs + ½ Hr
Course Title: Generative Artificial Intelligence		Course Code:AI365TDD

Department of Artificial Intelligence and Machine Learning

Q. No	PART - A	M	BT	CO
1	What role does the PatchGAN discriminator play in CycleGAN training and image quality?	2	2	2
2	In what way does identity loss help maintain original image attributes such as color and structure in CycleGAN training?	2	3	3
3	What is total variation loss in neural style transfer, and why is it important?	2	2	3
4	Why are CycleGANs better suited for image translation tasks when paired datasets are not available?	2	2	2
5	Identify the type of noise commonly introduced to images during the forward diffusion process in Denoising Diffusion Models.	2	2	2

Q. No	PART - B	M	BT	CO
1	Explain the training process of Generator and Discriminator in Generative Adversarial Networks (GANs) with suitable architecture diagram.	10	2	3
2	Explain the design and development process of a CycleGAN for converting landscape photographs into Monet-style paintings using unpaired datasets. Discuss the dataset requirements, architectural choices,	10	3	3
3	Design and compare the ResNet and U-Net generator architectures used in CycleGAN. Explain how each architecture affects the translation quality, particularly in terms of content preservation and style application.	10	3	3
4	Describe how neural style transfer balances maintaining the original image's structure, applying artistic style, and producing a smooth output. How do these aspects affect the final image quality?	10	3	3
5	Explain the forward diffusion process in Denoising Diffusion Models (DDMs). How does noise get added to the input data?	10	2	3

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