PRN:		Course Code :	P70PE101

First Year **M. Tech** End Semester Examination Winter 2024 000437

Program Specific Elective – I- Generative AI

Day and Date: Fri 6 DEC 2024 Max Marks: **50**

Time : 10:30AM To 12:30PM Duration: **02** hrs

Instructions:

1. All questions are compulsory.
2. Assume suitable data wherever necessary and mention it clearly.

		Attempt the following Question.	**Marks**	**Bloom's Level**	**CO**
Q.1	a)	What is the purpose of the encoder-decoder architecture in generative models?	2	1	1
	b)	Name any four advantages of Transformer architecture	2	1	2
	c)	What is the primary function of an autoencoder	2	1	3
	d)	List the key features of Claude 2	2	1	4
	e)	List common security issues associated with generative AI applications	2	1	5
Q.2		**Attempt the following Question.**			
	a)	Distinguish between Gated Recurrent Unit (GRU) and traditional RNN	5	4	1
	b)	Compare between Bayesian networks and Markov chains in probabilistic modelling	5	2	1
		OR			
	b)	Explain the advantages of using Transformers over recurrent neural networks in handling long-range dependencies in language modeling	5	2	2
Q.3		**Attempt the following Question.**			
	a)	Identify the difference between the Encoder and Decoder in a Transformer	5	3	2
	b)	Examine the architecture and operation of a Long Short-Term Memory (LSTM) network.	5	4	3
		OR			
	b)	Simplify the term Deep Convolutional GAN (DCGAN) with its advantages over traditional GAN architectures	5	4	3
Q.4		**Attempt the following Question.**			
	a)	Explain the basic idea behind diffusion models and their significance in generative tasks.	5	5	3
	b)	Evaluate the main capabilities of Falcon AI and its potential applications	5	5	4
		OR			
	b)	Identify the unique features Midjourney offer for creating visual content compared to other models?	5	3	4
Q.5		**Attempt the following Question.**			
	a)	Identify some common security issues associated with generative AI applications.	5	3	5
	b)	How can developers ensure that their generative AI models are fair and unbiased?	5	1	5
		OR			
	b)	Identify how can fairness be measured in the context of generative AI models?	5	3	5

****

ESE