

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: M.Tech.
BRANCH: AI-ML

SEMESTER : III
SESSION : MO/2023

SUBJECT: CS637 ADVANCED DEEP LEARNING

TIME: 3 Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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		CO	BL
Q.1(a)	Compare and contrast the chain-oriented Vs graph oriented neural networks. Give examples of each type. What do you mean by transfer learning?	[5] 1	2
Q.1(b)	Explain the two types of blocks used in Resnet? Demonstrate the functionalities of each block.	[5] 1	3
Q.2(a)	Identify the significance of bottleneck layer in autoencoder? What do you mean by denoising in autoencoder?	[5] 2	4
Q.2(b)	Discuss the design and working principles of Autoencoder model.	[5] 2	2
Q.3(a)	What do you mean by generative model? Differentiate the concepts of autoencoder and variational autoencoders?	[5] 3	4
Q.3(b)	Explain the network structure of Variational Autoencoder with suitable diagram.	[5] 3	3
Q.4(a)	Identify the significance of KL-Divergence in VAE? How do you achieve the stable training of the generator-discriminator network?	[5] 4	4
Q.4(b)	Explain the architecture and operational functionalities of Conditional GAN.	[5] 4	2
Q.5(a)	“The primary objective of WGAN is $p_g \rightarrow p_{data}$ ” ----- how will you justify this statement mathematically?	[5] 5	5
Q.5(b)	Discuss different distance functions used in Wasserstein GAN.	[5] 5	2

:::24/11/2023 E:::