

K. J. Somaiya Institute of Technology, Sion, Mumbai-22
(Autonomous College Affiliated to University of Mumbai)

Nov – Dec 2023

(B.Tech) Program: Artificial Intelligence and Data Science Scheme

Examination: LY Semester: VII **Scheme-II**

Course Code: AIC701 and Course Name: Deep Learning

Date of Exam: **29/11/2023**

Duration: 2.5 Hours

Max. Marks: 60

Instructions:																				
(1) All questions are compulsory.																				
(2) Draw neat diagrams wherever applicable.																				
(3) Assume suitable data, if necessary.																				
		Max. Marks	CO	BT level																
Q 1	Solve any six questions out of eight:	12																		
i)	Explain ReLU activation Function.	2	CO2	U																
ii)	What are the applications of RNN?	2	CO5	U																
iii)	What is the problem of Exploding and Vanishing Gradients?	2	CO2	U																
iv)	How image compression is done using autoencoder?.	2	CO3	U																
v)	For the Image matrix given below use max pooling method with stride 2 and show the output.	2	CO4	Ap																
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8	9	7	4																	
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vi)	Draw the multilayer perceptron neural network.	2	CO1	U																
vii)	Differentiate between LeNet and AlexNet.	2	CO4	U																
viii)	What are the applications of Deep Learning?	2	CO6	U																
Q.2	Solve any four questions out of six.	16																		
i)	Explain the LSTM architecture.	4	CO5	U																
ii)	Explain Mc-Culloch Pitts Neuron.	4	CO1	U																

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iii)	What are the various steps involved in image classification using CNN?	4	CO4	U
iv)	Explain various methods of doing regularization.	4	CO2	U
v)	Explain the working of Sparse autoencoders	4	CO3	U
vi)	Explain Deep Fake application.	4	CO6	U
Q.3	Solve any two questions out of three.	16		
i)	Explain back propagation through time (BTT).	8	CO5	U
ii)	Draw block diagram of de noising autoencoders. Explain its operation.	8	CO3	U
iii)	Explain different activation functions.	8	CO2	U
Q.4	Solve any two questions out of three.	16		
i)	Explain with examples linearly separable and non-linearly pattern classification	8	CO1	U
ii)	Explain CNN Architecture in detail. Discuss CNN operations. What are variants of CNN?	8	CO4	U
iii)	Draw block diagram and demonstrate Generative adversarial network (GAN) architecture.	8	CO6	U
