



SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)

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Continuous Assessment Examination 2 (Oct. 2021)

Program : BE /BTECH – ECE/MECH/CSE/IT/BTE **Max. Marks** : 30
Course : DEEP LEARNING NEURAL NETWORKS **Time** : 1 Hour
Course code : SECA4002 **Sem** : 5,7
Batch : 2018 - 2022,2019 -2023 **Date** : 22-10-2021

Part-A Answer ALL the questions (5×2=10)

Q.No	Questions	CO
1.	Shallow Networks Learn better than Deep Networks. In this context examine the usage of Residual Blocks in ResNet architectures.	CO3
2.	Hyperparameters control the learning process. Justify how Hyperparameter Optimization Procedure helps in achieving a best performance.	CO3
3.	The most common activation function which is used in Deep Neural Networks is ReLU function. Interpret on the helpfulness of Relu activation function in capturing Interactions between the inputs in a Deep Learning Neural Network.	CO3
4.	In backpropagation-based learning sometimes the gradients become very small thus leads to Vanishing Gradient Issue. Suggest a Deep Learning Model which helps in solving this issue of Vanishing Gradients by using Skip network concept. Also Specify how the model solves this issue.	CO4
5.	Suggest a suitable procedure in Deep Learning Networks which increases the spatial invariance of the model against spatial transformations with neat diagram.	CO4

Part-B Answer ALL the questions (2×10=20)

Q.No	Questions	CO
6.	Satellite imagery contains lot of information's which can be mined but due to dimensionality issues the process is more complex. As a Deep learning expert suggest a suitable deep learning-based procedure which helps in Dimensionality reduction of satellite imagery by using efficient coding's of	CO3

	unlabeled data with necessary diagrams and explanations.	
	(OR)	
7.	In Medical CT images, segmented outcomes can be split into further or can be merged to give new information's which helps us to make a good Decision. Enumerate how a GPU based CNN model which won the ImageNet Competition in 2012 can be used for the detection and identification of cancer cells from the given CT images.	CO3
8.	The president of French is invited to address the Indian Parliament on the occasion of Indian Independence Day celebrations. He delivers his speech in French. His speech has to be translated automatically to the regional languages by machines. Suggest a suitable speech recognition system based on learning long, short term dependencies.	CO4
	(OR)	
9.	Optimization of parameters in deep learning is the most important part because the overall efficiency and computational complicity of the model depends on this optimization. As a Deep Learning Expert elucidate the process involved in the Non-Convex Optimization for Deep Networks.	CO4

Note:

- ★ The answers for the above questions should be hand written and uploaded as single file in LMS in PDF, DOC, DOCX formats.
- ★ The answer sheets which you submit should have your Name, register number on all pages. Otherwise, it will not be evaluated.
- ★ Do not Copy or indulge yourself in any kind of Malpractice, the answers which you submit should be unique from others

***** **ALL THE BEST** *****