SATHYABAMA
INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)
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Continuous Assessment Examination 1 (Aug. 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 : 16-08-2021**

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

Q.No	Questions	CO
1.	Biological Neural Networks is superior to Artificial networks. Comment on the factors where biological systems is superior and where it fails when compared with Artificial neural systems.	CO1
2.	Artificial Neural Networks are best Approximators. Justify how this universal approximation is performed by ANN with suitable explanation & necessary expressions.	CO1
3.	In the training process the weight may get trapped. Suggest a suitable stochastic based algorithm by which you can avoid this situation	CO1
4.	Suggest a suitable procedure which is implemented in Deep Learning Networks to standardize the real-world data with undesirable characteristics and redundancies,	CO2
5.	Deep networks can solve complex problems better than Shallow networks. Recall the factors where Shallow Networks and Deep networks differ.	CO2

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

Q. No	Questions	CO(L)
6.	Dimensionality reduction is a major issue faced by Machine Learning Procedures. Describe an appropriate Linear procedure which helps in Dimensionality reduction by using Support vectors with necessary diagrams and explanations.	CO1
	(OR)	
7.	Consider a data set with non-linearity (Linear Inseparable data's). Guide the Neural Network Design Engineer by	CO1

Q. No	Questions	CO(L)
	suggesting a multi-Layer non gradient method to overcome the issues of Linear Inseparability.	

8.	As an AI expert you are tasked with the development of a Breast cancer classification algorithm. Suggest a suitable feed forward supervised gradient-based procedure with necessary diagram, expressions and also specify how it guarantees a fast convergence?	**CO2**
(OR)		
9.	As a data analyst you were assigned to develop a software package for detection of cancer cells from the breast regions. The data provided to you has lot of outliers and traditional algorithms leads to overfitting. Suggest an appropriate technique which is used to preprocess data so that the effect of overfitting is removed in detail.	**CO2**

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