

School of Computing Science and Engineering

**Bachelor of Technology in Computer Science and Engineering
Semester End Examination - Aug 2024**

**Duration : 180 Minutes
Max Marks : 100**

Sem VII - BTCS9608 - Deep Learning

General Instructions

Answer to the specific question asked

Draw neat, labelled diagrams wherever necessary

Approved data hand books are allowed subject to verification by the Invigilator

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| 1) | Explain different types of transfer function in deep learning. | K1(2) |
| 2) | Relate the importance of cost function with respect to gradient descent. | K2(4) |
| 3) | Discuss the significance of perceptron in perceptron model. | K2(6) |
| 4) | Discuss Loss Function and infer the steps for choosing the Loss Function for a Deep Learning model. | K3(9) |
| 5) | Compare the applications of AI, Machine Learning, and Deep Learning | K3(9) |
| 6) | Justify the zero initialization of weight as not a good initialization technique. | K5(10) |
| 7) | Analyze the drawbacks of single layer perceptron. What are the ways to overcome this? | K4(12) |
| 8) | Criticize why is it difficult to train a deep learning model. How can we overcome this? | K5(15) |
| 9) | Evaluate a 3-layer MLP model (one input layer, one hidden layer with tanh activation and one output layer) which will be used to classify the images from any well-known dataset. You can use the built-in modules in PyTorch to build your model, such as Linear, Dropout, Tanh, etc. | K5(15) |
| 10) | Build a neural network that classifies two dimensional data (i.e., $X = [x_1, x_2]$) into two classes: diamonds and crosses. We have a set of training data that is plotted as follows: | K6(18) |

