**Chapter wise question Bank with Course Outcome Blooms Level Mapping**

**Subject: Deep Learning**

* **Course Outcome:-**

At the end of course student will able to

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| **CO1** | 1) Students will be able to describe the deep neural network. |
| **CO2** | 2) Students will be able to design a deep neural network for a given problem. |
| **CO3** | 3) Students will be able to design a convolutional neural network for a given problem. |
| **CO4** | 4) Students will be able to design a recurrent neural network for a given problem. |
| **CO5** | 5) Students will be able to choose appropriate deep neural network architecture for a given problem. |

**Unit – 1**

**Historical trends in deep learning**

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| Q. No. | Question Title | Marks | CO | BL |
| 1 | Define Machine Learning. state different types of algorithms | 4 | CO1 | L1 |
| 2 | Write differences between LOOCV and K fold cross validation | 4 | CO1 | L2 |
| 3 | How to make machine learning model generalized | 4 | CO1 | L3 |
| 4 | Explain underffiting and overfitting | 5 | CO1 | L2 |
| 5 | Assume we have two variables, P and Q and we wish to find their relation. A line of equation tell us that P = mQ+c . Suppose the samples of the variables P and Q are available to us. Is it possible to apply linear regression to this data to estimate the values of *m* and *c*? justify your answers | 8 | CO1 | L3 |
| 6 | What is regularization. explain its different method | 10 | CO1 | L2 |
| 7 | Explain Linear perceptron algorithm | 10 | CO1 | L2 |
| 8 | Define :   1. Bias 2. Variance 3. Loss function | 6 | CO1 | L1 |
| 9 | Assume a simple deep learning model with 3 neurons and inputs= 1,2,3,4,5. The weights to the input neurons are 2,3 and 4 respectively. Assume the activation function is a linear constant value of 2. calculate the output? | 8 | CO1 | L3 |
| 10 | **A new phone, Samsung galaxy S-22 has been announced and it is what you’ve been waiting for, all along. You decide to read the reviews before buying it. From past experiences, you’ve figured out that good reviews mean that the product is good 95% of the time and bad reviews mean that it is bad 65% of the time. Upon glancing through the reviews section, you find out that the S-22 has been reviewed 1269 times and only 172 of them were bad reviews. Find out the probability that, if you order the S-22, it is a good phone?** | 8  8 | CO1 | L3 |
| 11 | Describe Dimetionality Reduction | 5 | CO1 | L2 |
| 12 | Discuss different types of hyperparameter | 5 | CO1 | L2 |

**Unit – 2**

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| **Q. No.** | **Question Title** | **Marks** | **CO** | **BL** |
| 1 | Enlist the different platform for deep learning | 4 | CO2 | L1 |
| 2 | Write uses of different activation function | 4 | CO2 | L3 |
| 3 | Write differences between ANN and DNN | 4 | CO2 | L2 |
| 4 | Explain gradient based learning | 6 | CO2 | L2 |
| 5 | Define   1. Early stopping 2. Dropout 3. Error function | 5 | CO2 | L1 |
| 6 | Explain architectural design | 5 | CO2 | L1 |
| 7 | Explain optimization methods | 5 | CO2 | L2 |
| 8 | Explain deep feed forward network | 5 | CO2 | L1 |
| 9 | Enlist different deep learning software libraries | 5 | CO2 | L1 |
| 10 | Write differences between Relu and sigmoid function | 5 | CO2 | L2 |

**Introduction to simple DNN**

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| **Q. No.** | **Question Title** | **Marks** | **CO** | **BL** |
| 1 | **Explain different convolutional Neural network operations** |  |  |  |
| 2 | **Explain VGGNet, Lenet dataset** |  |  |  |
| 3 | What is RNN, Explain its working in details |  |  |  |
| 4 | **Write a short note on RNN Topolgies** |  |  |  |
| 5 | **What is drawback of RNN. How t is overcome by LSTM** |  |  |  |
| 6 | **Explain Bidirectional LSTMs** |  |  |  |
| 7 | **Explain Bidirectional RNNs** |  |  |  |
| 8 | **What is pooling. explain its types** |  |  |  |
| 9 | **Write a short note on Imagenet** |  |  |  |
| 10 | **Explain case study- Handwritten digit recognition using deep laarning** |  |  |  |

**Unit-3**

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| **Q. No.** |  | **Marks** | **CO** | **BL** |
| 1 | **Explain autoencode in details** |  |  |  |
| 2 | **What are the diffrenet types of autoncoder explain it in details** |  |  |  |
| 3 | Explain the use of autoencder in dimetionality reduction & classification |  |  |  |
| 4 | Explain RMS Prop Deep Learning Optimizer |  |  |  |
| 5 | Explain SGD optimizer for CNNs |  |  |  |
| 6 | **Write a short note on**  **a.stochastics atoenoder**  **b.denoising autoencder** |  |  |  |
| 7 | **Write different applications of auto encoder** |  |  |  |
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Unit-IV

Unit-V

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| **Q. No.** | **Question Title** | **Marks** | **CO** | **BL** |
| 1 | Explain Deep Architectures of computer Vision |  |  |  |
| 2 | Define Transfer Learning. Explain in detail |  |  |  |
| 3 | Explain Metric Learning |  |  |  |
| 4 | Explain RCNNs with Keras |  |  |  |
| 5 | **Explain** Siamese Networks |  |  |  |
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