**WORKSHEET-1**

**DEEP LEARNING**

**Q1 to Q8 are MCQs with only one correct answer. Choose the correct option.**

1. Which of the following can approximate any function universally (i.e. universal approximators)?
   1. Boosted Decision Trees B) Neural Networks

C) Kernel SVM D) All of the above

Ans: (D)

1. In which of the following domains we cannot use neural networks?
   1. Image Processing B) Speech Processing

C) Fraud Detection D) None of the above

Ans: (D)

1. Rearrange the following steps of a gradient descent algorithm in correct order of their occurrence?

i. Initialize random weight and bias

ii. Repeat the process until you find the best weights of network

iii. Change weights and biases for each neuron to reduce the error

iv. Calculate error distances between the actual and the predicted value v. Pass an input through the network and get values from output layer Choose the correct option:

* 1. iv – i – iii – v – ii B) v – i – iii – iv –ii

C) i – v – iv – iii – ii D) i – v – iii –iv –ii

Ans: (C)

1. What is the full form of RNN?
   1. Recurrent Neural Network B) Recursive Neural Network

C) Redundant Neural Network D) Resurrection Neural Network

Ans: (A)

1. What is plasticity in neural networks?
   1. input pattern keeps on changing B) input pattern has become static

C) output pattern keeps on changing D) output is static

Ans: (A)

6. What is stability plasticity dilemma?

A) system can neither be stable nor plastic

* 1. static inputs & categorization can’t be handled
  2. dynamic inputs & categorization can’t be handled
  3. none of the above

Ans: (C)

1. Read the following statements:

**Statement 1**: It is possible to train a network well by initializing all the weights as 0 **Statement 2**: It is possible to train a network well by initializing biases as 0

Which of the statements given above is true, Choose the correct option?

* 1. Statement 1 is true while Statement 2 is false
  2. Statement 2 is true while statement 1 is false
  3. Both statements are true
  4. Both statements are false

Ans: (B)

1. Which of the following architecture has feedback connections?
   1. Recurrent Neural network B) Convolutional Neural Network

C) Restricted Boltzmann Machine D) simple Artificial Neural Network

Ans: (A)

**Q9 and Q10 are MCQs with one or more correct answers. Choose all the correct options.**

1. In training a neural network, you notice that the loss does not decrease in the few starting epochs. The reason behind it could be
   1. Learning Rate is low B) Regularisation parameter is high

C) Regularisation parameter is low D) Stuck at local minima

Ans: (ALL)

1. Which of the following function(s) can be used to impart non – linearity in a neural network?
   1. Stochastic Gradient Descent B) Rectified Linear Unit

C) Convolution Function D) Sigmoid Function

Ans: (B)

**Q11 to Q15 are subjective answer type question. Answer them briefly.**

1. What is Deep Learning?

Ans: Deep Learning is a subfield of machine learning. Deep Learning is based on artificial neural networks with representation learning. Deep Learning can be supervised deep learning or unsupervised deep learning or reinforcement deep learning.

1. What is reinforcement learning?

Ans: Reinforcement learning is an area of Machine Learning which is about taking suitable action to maximize reward in a particular situation it is employed by various software and machines to the best possible behaviour.

1. What Are the Differences Between Machine Learning and Deep Learning?

Ans: One of the differences between machine learning and deep learning models is on the feature extraction area.

Feature extraction is done by human in machine learning whereas deep learning models figure them out by itself.

1. What is a perceptron?

Ans: Perceptrons are a type of artificial neuron that predated the sigmoid neuron. There are two types of perceptrons 1. Single layers perceptrons 2. Multiple layer perceptrons.

1. What’s the difference between AI and ML?

Ans: Machine Learning is a subset of AI. Machines take data and learn for themselves. It is currently the most promising tool in the AI pool for businesses.

AI Any technique that enables computers to mimic human intelligence using logic decision that is AI