**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)?**

A) Boosted Decision Trees B) Neural Networks

C) Kernel SVM D) All of the above

Ans=(D)All of the above

**2. In which of the following domains we cannot use neural networks?**

A) Image Processing B) Speech Processing

C) Fraud Detection D) None of the above

Ans=(D) None of the above

**3. 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:

A) iv – i – iii – v – ii B) v – i – iii – iv –ii

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

Ans=(A) iv – i – iii – v – ii

**4. What is the full form of RNN?**

A) Recurrent Neural Network B) Recursive Neural Network

C) Redundant Neural Network D) Resurrection Neural Network

ans=(A) Recurrent Neural Network

**5. What is plasticity in neural networks?**

A) input pattern keeps on changing B) input pattern has become static

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

Ans=(A) input pattern keeps on changing

**6. What is stability plasticity dilemma?**

A) system can neither be stable nor plastic

B) static inputs & categorization can’t be handled

C) dynamic inputs & categorization can’t be handled

D) none of the above

Ans=(C) dynamic inputs & categorization can’t be handled

**7. 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?

A) Statement 1 is true while Statement 2 is false

B) Statement 2 is true while statement 1 is false

C) Both statements are true

D) Both statements are false

Ans=(B) Statement 2 is true while statement 1 is false

**8. Which of the following architecture has feedback connections?**

A) Recurrent Neural network B) Convolutional Neural Network

C) Restricted Boltzmann Machine D) simple Artificial Neural Network

Ans=(A) Recurrent Neural network

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

**9. In training a neural network, you notice that the loss does not decrease in the few starting epochs. The reason behind it could be**

A) Learning Rate is low B) Regularisation parameter is high

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

Ans=(A)(B)(D)

**10. Which of the following function(s) can be used to impart non – linearity in a neural network?**

A) 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.**

**11. What is Deep Learning?**

Ans=-deep learning is a machine learning technique. It teaches a computer to filter inputs through layers to learn how to predict and classify information.Observations can be in the form of images, text, or sound. The inspiration for deep learning is the way that the human brain filters information.

**12. What is reinforcement learning?**

Ans=Reinforcement learning is an area of Machine Learning. It is about taking suitable action to maximize reward in a particular situation.

It is employed by various software and machines to find the best possible behavior or path it should take in a specific situation.

Reinforcement learning differs from the supervised learning in a way that in supervised learning the training data has the answer key with it so the model is trained with the correct answer itself whereas in reinforcement learning,there is no answer but the reinforcement agent decides what to do to perform the given task.In the absence of a training dataset, it is bound to learn from its experience.

**13. What Are the Differences Between Machine Learning and Deep Learning?**

Ans=ML-A subset of artificial intelligence involved with the creation of algorithms which can modify itself without human intervention to produce desired output- by feeding itself through structured data.

DL-A subset of machine learning where algorithms are created and function similar to those in machine learning,but there are numerous layers of these algorithms- each providing a different interpretation to the data it feeds on.Such a network of algorithms are called artificial neural networks, being named so as their functioning is an inspiration,or you may say; an attempt at imitating the function of the human neural networks present in the brain.

**14. What is a perceptron?**

Ans=A perceptron is a neural network unit (an artificial neuron) that does certain computations to detect features or business intelligence in the input data.

**15. What’s the difference between AI and ML?**

Ans=AI is a bigger concept to create intelligent machines that can simulate human thinking capability and behavior, whereas,Machine learning(ML) is an application or subset of AI that allows machines to learn from data without being programmed explicitly.