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

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

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

4. What is the full form of RNN?

**A) Recurrent Neural Network** B) Recursive Neural Network

C) Redundant Neural Network D) Resurrection 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

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

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

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

**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

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

**11. What is Deep Learning?**

Deep learning is an artificial intelligence function that imitates the workings of the human brain in processing data and creating patterns for use in decision making. Deep learning is a subset of machine learning in artificial intelligence that has networks capable of learning unsupervised from data that is unstructured or unlabeled. Also known as deep neural learning or deep neural network.

**12. What is reinforcement learning?**

* Reinforcement learning is an area of machine learning .It is about taking suitable action to maximize rewards in a particular situation.
* It is employed by various software and machines to find the est 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?**

* Machine learning is a subset of artificial intelligence associated with creating algorithms that can change themselves without human intervention to get the desired result – by feeding themselves through structured data.
* Deep learning is a subset of machine learning where algorithms are created and function similarly to machine learning, but there are many levels of these algorithms, each providing a different interpretation of the data it conveys. This network of algorithms is called artificial neural networks. In simple words, it resembles the neural connections that exist in the human brain.
* The main difference between deep learning and machine learning is due to the way data is presented in the system. Machine learning algorithms almost always require structured data, while deep learning networks rely on layers of ANN (artificial neural networks).
* Machine learning algorithms are designed to “learn” to act by understanding labeled data and then use it to produce new results with more datasets. However, when the result is incorrect, there is a need to “teach them”.

**14. What is a perceptron?**

A perceptron is a neural network unit (an artificial neuron) that does certain computations to detect features or business intelligence in the input data. The perceptron is one of the easiest data structures for the study of neural networking

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

* AI stands for Artificial intelligence, where intelligence is defined acquisition of knowledge intelligence is defined as a ability to acquire and apply knowledge.
* ML stands for Machine Learning which is defined as the acquisition of knowledge or skill.
* AI aim is to increase chance of success and not accuracy, whereas ML aim is to increase accuracy, but it does not care about success.
* AI work as a computer program that does smart work, whereas ML is a simple concept machine takes data and learn from data.
* AI goal is to simulate natural intelligence to solve complex problem, whereas ML goal is to learn from data on certain task to maximize the performance of machine on this task.