**1. Explain the architecture of Spark.**

The spark follows master slave architecture which consists of one master and many slaves or workers.i consistes of driver program which do main function and the cluster manger which provides the job to done by the workers which going to the job.This also follows DAG directed acyclic graph.

**2. Explain activation function**

Activation funcion is a function which is in every hidden layer of neural network which allows which neuron should be activated so that the input from that neuron will be passed to the next layer which eventually helps for the prediction or classification of our problems.

**3. List different types of activation function with their formula**

**Sigmoid function:**

Formula:1/(1+e^-x)

Range: 0 to 1.

**Tanh function:**

Formula:(e^x-e^-x)/(e^x+e^-x)

Range: -1 to 1

**Relu function:**

Formula:max(0,x)

Range: 0 to infinity

**Leaky relu function:**

Formula:max(0,x) when x>=0

A\*x for x<0 where A is some constant

Range: - infinity to infinity

**Exponential relu function:**

Formula:max(0,x) when x>=0

A\*(e^x-1) for x<0 where A is some constant

Range: -A to infinity

**4. Explain Hybrid Inheritance with Code.**

**5. Explain Neural Networks .**

Neural network is a network of layers which consists of neurons which process the given input and provides us the output and the neural network is works similarly to human brain.A neural network has a input layer,hidden layer and output layer.The no of hidden layer may be 1 to many based on the complexity of the problem.Each of the layers consists of many neurons and each layer is connected to the next one and the before one.The input layer has as much neurons equal to no of features in input dataset.Each of the hidden layers has activation function which to pass the inputs from necessary neurons and prevents unnecessary neuron inputs for further prediction.Between each most of the inputs are passed to next layers with some amount of weight and some some bias.