Neural Networks – Warm up Quiz.

1. Select the correct statement related to real neuron?

	A neuron has a single input and a single output only
	A neuron has a multiple inputs but a single output only
	A neuron has a single input but multiple outputs
✓	All of these

2. Select the correct technique which is same as dropout in neural network?

✓	Bagging
	Boosting
	Stacking
	Mapping

3. Which of the following gives non-linearity to a neural network?

	Stochastic Gradient Descent
✓	Rectified Linear Unit
	Convolution function
	GRU

4. Which of the following statements is true about model capacity?

✓	As number of hidden layers increase, model capacity increases
	As dropout ratio increases, model capacity increases
	As learning rate increases, model capacity increases
	As number of hidden layers decrease, model capacity increases

5. The fundamental unit of brain is _____.

	capillary
	cortex
	synapse
✓	neuron

6. Which of the following technique is used to deal with overfitting in a neural network?

	Dropout
	Regularization
	Batch Normalization
✓	All of these

7. During the start of the training, what is the value of the weights?

	Zero
	Infinity
✓	Random
	1

8. The test set accuracy of a backpropagation neural network can often be improved by _____.

✓	increasing the number of epochs used to train the network
	decreasing the number of hidden layer nodes
	increasing the learning rate
	decreasing the number of hidden layers

Neural Networks – Final Quiz.

1. Select the correct sequential order of tasks in a 'perceptron'? i)Initialize weights of perceptron randomly
ii)Go to the next batch of dataset
iii)If the prediction does not match the output, change the weights
iv)For a sample input, compute an output

	i,ii,iii,iv
	iv,iii,ii,i
	iii,i,ii,iv
✓	i,iv,iii,ii

2. Which of the following options is not a major strength of the neural network approach?

	Neural networks work well with datasets containing noisy data
	Neural networks can be used for both supervised learning and unsupervised clustering
✓	Neural network learning algorithms are guaranteed to converge to an optimal solution
	Neural networks can be used for applications that require a time element to be included in the data

3. Neural network training is accomplished by repeatedly passing the training data through the network while_____.

✓	individual network weights are modified
	training instance attribute values are modified
	the ordering of the training instances is modified
	individual network nodes have the coefficients on their corresponding functional parameters modified

4. Batch Normalization is useful because, _____.

✓	it normalizes(changes) all the input before sending it to the next layer
	it returns back the normalized mean and standard deviation of weights
	it is a very efficient backpropagation technique
	it increaes the amount by what the hidden unit values shift around (covariance shift)

5. Which of the following options is a two-layered neural network used for unsupervised clustering?

	backpropagation network
✓	Kohonen network
	perceptron network
	aggomerative network

6. A feed-forward neural network is said to be fully connected when_____.

	all nodes are connected to each other
	all nodes at the same layer are connected to each other
✓	all nodes at one layer are connected to all nodes in the next higher layer
	all hidden layer nodes are connected to all output layer nodes

7. Which of the following options, mathematically models the activation potential?

	Weights
	Bias
	Summation of inputs
✓	Activation function

8. During training phase of the neural network, which of the following does not happen?

	Weights optimized
✓	Number of neurons decreases
	Error decreases
	loss decreases

9. In Neural network, the concept of synapse is modelled in mathematics is called as_____.

	Summation of the inputs
	Threshold
	Bias
✓	Wi * Xi

10. Epochs represent the total number of_____.

	input layer nodes
✓	passes of the training data through the network
	network nodes
	passes of the test data through the network

11. In which of the following neural net architecture, does weight sharing occur?

	Convolutional Neural Network
	Recurrent Neural Network
	Fully Connected Neural Network
✓	Both Convolutional and Recurrent Neural Network

12. During backpropagation training, the purpose of the delta rule is to make weight adjustments so as to_____.

	minimise the number of times the training data must pass through the network
	minimise the number of times the test data must pass through the network
	minimise the sum of absolute differences between computed and actual outputs
✓	minimise the sum of squared error differences between computed and actual output

Image Recognition – Warm up Quiz.

1. How many types of recognition are there in artificial intelligence?

	1
	2
✓	3
	4

2. Which of the following options is the only way to learn about the different kinds of human faces?

	Perception
	Speech
✓	Learning
	Hearing

3. Which of the following options is not a name of convolutional network?

	max pooling
	down sampling
	subsampling
✓	min pooling

4. We use _____ to do Object detection.

✓	CNN
	RNN
	LSTM
	GRU

5. Which of the following statements is correct about Max pooling?

	Increase the number of parameters within the model
✓	Reduces the number of parameters within the model
	It allows you to increase computation since your feature maps are smaller after the pooling
	It reduces the number of layers and increased the model complexity

6. SoftMax function is used in _____.

	input layer
	middle layer
	hidden layer
✓	output layer

7. ReLU stands for _____.

✓	rectified linear unit
	recurrent linear unit
	robust linear unit
	regression linear unit

Image Recognition – Final Quiz.

1. CNNs use a variation of _____designed to require minimal pre-processing.

	single layer perceptron
	double layer perceptron's
✓	multilayer perceptron's
	None of the these

2. Which of the following options is the characteristic of receptive fields in CNN?

	Specifies the range of indices selected for input into the convolution kernel in terms of index position and size
	The size of index range in each dimension (usually odd and less than 20) matched to the kernel input size characteristics
	The position of index range in each dimension, systematically varied to cover the full range of information in all dimensions, usually varied by fixed increments
✓	All of these

3. Which of the following options can be represented by using histograms or empirical frequency distributions?

	Words
	Colour
	Texture
✓	Both Colour & Texture

4. Which of the following object recognition process is an error-prone process?

✓	Bottom-up segmentation
	Top-down segmentation
	Both Bottom-up & Top-down segmentation
	Opacity

5. Which of the following is not a example of Feature Mappings?

	Edges
	Zoom
	Objects
✓	Frame index

6. _____are collections of convolutional layers.

	RC blocks
✓	Dense blocks
	Brick blocks
	Perceptron

7. How the distance between two shapes can be defined?

✓	Weighted sum of the shape
	Size of the shape
	Shape context
	Number of shape

8. Which of the following options describes the coarse arrangement of the rest of the shape with respect to the point?

	Shape
	intent
✓	Shape context
	Context

9. How many types of image processing techniques are there in image perception?

	1
	2
✓	3
	4

10. Name the process of breaking an image into groups?

	Smoothing
	pixel
	Edge detection
✓	Segmentation

11. In a fully connected layer each neuron is connected to every neuron in _____.

	output layer
	both the previous and output layers
✓	the previous layer
	the next layer

12. The convolutional layer is the core building block of a_____.

	RNN
✓	CNN
	NN
	All of these

13. Which of the following options provides a framework for studying object recognition?

	Learning
	Unsupervised learning
✓	Supervised learning
	Reinforcement learning

Programming with Tensorflow – Warm up Quiz.

1. TensorFlow is developed by _____.

	Amazon
✓	Google
	Apple
	IBM

2. Which of the following APIs is not outside TensorFlow project?

	TFLearn
	TensorLayer
✓	Estimators
	Sonnet

3. A graph can be parameterised to accept external inputs, known as _____.

	session
	computational graph
	estimators
✓	placeholders

4. Which of the following options is incorrect about Session?

	A session encapsulates the state of the TensorFlow runtime
	It runs TensorFlow operations
	To feed the graph with the values of a tensor, you need to open a session
✓	Sessions are dependent

5. Tensorboard is used for _____.

	random values to be used afterwards in the training process
	control dependency between two nodes
✓	analysing data flow graphs
	in-graph to maintain state across session

6. A tensor can only consider _____ of data at a time.

	two type
	three type
✓	one type
	four type

7. Which one is not a type of TensorFlow Error?

	InternalError
	NotFoundError
✓	ExternalError
	UnKnownError

8. Tensorboard runs on which of the following default port?

	8088
	8004
	6088
✓	6006

9. Select the main components of TensorFlow.

	Graph
	Tensor
	Session
✓	All of these

10. Which of the following statements is incorrect about Estimators?

	You can run Estimator-based models on CPUs, GPUs, or TPUs without recoding your model.
✓	Estimators are themselves built on tf.Graph(), which simplifies customization.
	Estimators build the graph for you.
	Estimators provide a safe distributed training loop that controls when handle exceptions

Programming with Tensorflow – Final Quiz.

1. Select the incorrect operation.

	tf.add(a, b)
✓	tf.sub(a, b)
	tf.multiply(a, b)
	tf.div(a, b)

2. Which of the following methods is equivalent to run() ?

	pow()
✓	eval()
	rand()
	All of these

3. Biases can be considered as _____.

	input
✓	errors
	output
	underfitting

4. Keras was not part of the TensorFlow until the release _____.

	1.1
	1.2
	1.3
✓	1.4

5. Which of the following options is correct, when you execute a multiplication over two tensors?

	Tensors shape must be different
✓	Tensors shape must be same
	It depends on the data type of tensors
	It depends on number of tensors

6. The number of elements of a scalar is always _____.

	2
	3
✓	1
	4

7. Rank 2 in TensorFlow corresponds to which of the following mathematical entity?

	Scalar (magnitude only)
✓	Matrix (table of numbers)
	Vector (magnitude and direction)
	3-Tensor (cube of numbers)

8. Which of the following options is not a advantage of placeholder?

	allow developers to create operations
	no need to provide the data in advance
	data can be added in runtime from external sources
✓	allows developers to get insight into each node and see flow of data

9. Which action Estimators encapsulate?

	Training
	Evaluation
	Prediction
✓	All of these

11. Recall is _____ rate.

	true negative
✓	true positive
	false negative
	false positive

Last Year Question Paper.

1. **Which activation function is used in the last layer of a Neural Network for multiclass classification?**
   i. **Softmax**
   ii. **Sigmoid**
   iii. **Tanh**
   iv. **RELU**

   Ans: Softmax

2. **What is the size of the MNIST dataset?**
   i. **10000 images**
   ii. **1 million images**
   iii. **1 lakh images**
   iv. **70000 images**

   Ans: 70000 images.

3. **What provides non-linearity to perceptron?**
   i. **Net input function**
   ii. **Bias**
   iii. **Activation function**
   iv. **Weights**

   Ans: Activation function

4. **Which type of variable is used for feeding data while training?**
   i. **Constants**
   ii. **Variables**
   iii. **Feed Dictionary**
   iv. **Placeholders**

   Ans: Placeholders

5. **Which is the method used for overcoming overfitting in neural networks?**
   i. **Dropout**
   ii. **Shoot out**
   iii. **Keepit**
   iv. **Deactivation**

   Ans: Dropout

6. **In gradient descent, which of these function's least value seeks for?**
   i. **Y = mx + c**
   ii. **Cost function**
   iii. **Sigmoid function**
   iv. **Performance function**

   Ans: Cost function

7. **Which of the following is defined as the minimum threshold to be reached for signal to pass on?**
   i. **Sigmoid**
   ii. **RELU**
   iii. **Activation potential**
   iv. **Axonal bifurcation**

   Ans: Activation potential

8. **Max pooling takes _____.**
   i. **Minimum value of each window.**
   ii. **Maximum value of each window.**
   iii. **First value of each window.**
   iv. **Last value of each window.**

   Ans: Maximum value of each window.

9. **Which of these is a variant of RNN?**
   i. **LSTM**
   ii. **C-RNN**
   iii. **V-RNN**
   iv. **F-RNN**

   Ans: LSTM

10. **The purpose of back propagation is to find the error gradients with respect to?**
   i. **Output, Y**
   ii. **Inputs**
   iii. **SSE**
   iv. **Bias and weights**

   Ans: Bias and weights