

UNIT 1

Question 1

Complete

Mark 0.00 out of 1.00

A search algorithm takes _____ as an input and returns _____ as an output.

☐

a.

Parameters, sequence of actions

☒

b.

Solution, problem

☐

c.

Problem, solution

☐

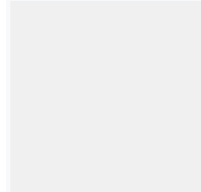
d.

Input, output

Question 2

Complete

Mark 1.00 out of 1.00



Flag question

Question text

Which of the following definitions correctly defines the State-space in an AI system?

☐

a.

A state space is the total space available for the agent in the state

☒

b.

A state space can be defined as the collection of all the problem states

☐

c.

A state space is a state which exists in environment which is in outer space

☐

d.

All of the above

Question 3

Complete

Mark 1.00 out of 1.00

Flag question

Question text

In BFS the frontier is implemented as a _____ queue.

☐

a.
Random

☒

b.
FIFO

☐

c.
FILO

☐

d.
LIFO

Question **4**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Which of the following algorithm is online search algorithm?

☐

a.
None of the mentioned

☐

b.
Depth-first search algorithm

☐

c.
Breadth-first search algorithm

☒

d.
Hill-climbing search algorithm

Question **5**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Which algorithm are in more similar to backward chaining algorithm?

☐

a.
Hill-climbing search algorithm

☐

b.
All of the mentioned

☒

c.
Depth-first search algorithm

☐

d.
Breadth-first search algorithm

Question **6**

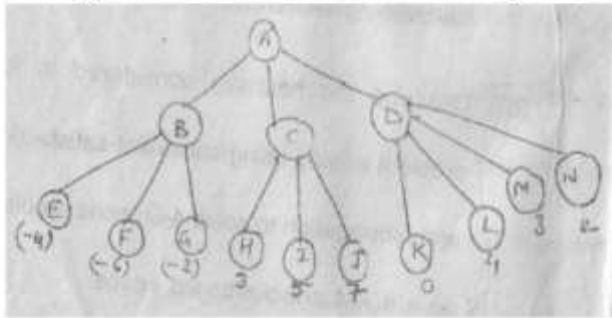
Complete

Mark 4.00 out of 5.00

Flag question

Question text

Example 1: Considering the following game tree search space



•Which move should be chosen under min-max search procedure, if the first move is a maximizing move?

Prepared by :- Agniwesh Mishra, RCET,
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The initial call starts from A. The value of alpha here is -INFINI
At B it the minimizer must choose min of D and E and hence c
At D, it looks at its left child which is a leaf node. This node re
To decide whether its worth looking at its right node or not, it c
D now looks at its right child which returns a value of 5. At D, a

Question 7

Complete

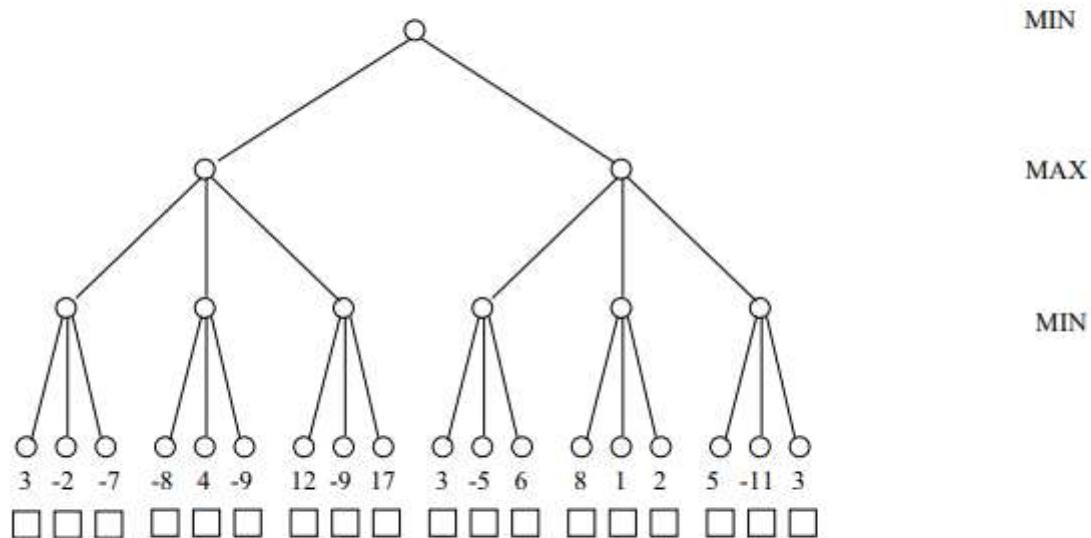
Mark 0.00 out of 5.00

Flag question

Question text

It is your turn to do some of the alpha-beta pruning. The tree below indicates the complete Minimax tree for a particular problem (first move by MIN, then MAX, and then MIN again – notice that is different from our previous examples, where MAX started). The number at each leaf p indicates the value of the static evaluation function $e(p)$ if it were computed at that leaf.

- a) Now your job is to check the boxes under those leaves that do **not** need to be created and evaluated thanks to the alpha-beta pruning.



- b) Which move (the left or right one) should MIN make, and why, i.e., what exactly is the advantage of making this move over making the other one?

Question **8**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

What is the heuristic function of greedy best-first search?



a.

$f > h$



b.

$f < h$



c.

$f = h$



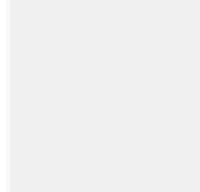
d.

$f \neq h$

Question **9**

Complete

Mark 1.00 out of 1.00



Flag question

Question text

Hill climbing sometimes called _____ because it grabs a good neighbor state without thinking ahead about where to go next.



a.

Needy local search



b.

Optimal local search



c.

Heuristic local search



d.

Greedy local search

Question **10**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Blind search is also called as _____.

☐

a.
Simple reflex search

☐

b.
Initial Search

☒

c.
Uninformed search

☐

d.
Informed search

Question **11**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Which search method takes less memory?

☐

a.
Optimal search

☐

b.
Linear Search

☒

c.
Depth-First Search

☐

d.
Breadth-First search

Question **12**

Complete
Mark 1.00 out of 1.00

Flag question

Question text

In which state spaces does the online-dfs-agent will work?

☐

a.
All of the mentioned

☒

b.
Reversible state spaces

☐

c.
Irreversible state spaces

☐

d.

searchable state spaces Question 1

Complete
Mark 0 out of 1

Flag question

Question text

This type of supervised network architecture does not contain a hidden layer.

☒

a.
Genetic

☐

b.
Self-organizing map

☐

c.
Backpropagation

☐

d.
Perceptron

Question 2

Complete
Mark 0 out of 1

Flag question

Question text

Given evidence E and hypothesis H. The likelihood of sufficiency is computed as



a.

The conditional probability of E being false given H is true divided by the conditional probability of E being true given H is false.



b.

The conditional probability of E being true given H is true divided by the conditional probability of E being false given H is false.



c.

The conditional probability of E being true given H is true divided by the conditional probability of E being true given H is false.



d.

The conditional probability of E being false given H is true divided by the conditional probability of E being false given H is false.

Question 3

Complete
Mark 0 out of 1

Flag question

Question text

Machine learning techniques differ from statistical techniques in that machine learning methods



a.

Are better able to deal with missing and noisy data.



b.

Typically assume an underlying distribution for the data.



- c.
Are not able to explain their behavior.
- ☐
- d.
Have trouble with large-sized datasets.

Question **4**
Complete
Mark 0 out of 1

Flag question

Question text

Which statement is true about prediction problems?

- ☒
- a.
The output attribute must be categorical.
- ☐
- b.
The output attribute must be numeric.
- ☐
- c.
The resultant model is designed to determine future outcomes.
- ☐
- d.
The resultant model is designed to classify current behavior.

Question **5**
Complete
Mark 0 out of 1

Flag question

Question text

Supervised learning and unsupervised clustering both require at least one____

- ☒
- a.
Hidden attribute.
- ☐
- b.
Input attribute.



c.
Categorical attribute.

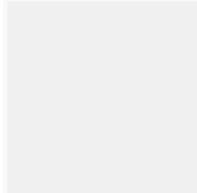


d.
Output attribute.

Question **6**

Complete

Mark 1 out of 1



Flag question

Question text

Classification problems are distinguished from estimation problems in that__



a.
Classification problems require the output attribute to be numeric.



b.
Classification problems do not allow an output attribute.



c.
Classification problems require the output attribute to be categorical.

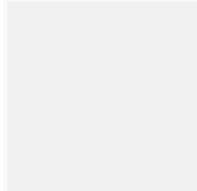


d.
Classification problems are designed to predict future outcome.

Question **7**

Complete

Mark 0 out of 1



Flag question

Question text

Supervised learning differs from unsupervised clustering in that supervised learning requires_____



a.
At least one output attribute.



- b.
At least one input attribute.
- ☒
- c.
Input attributes to be categorical.
- ☐
- d.
Output attributes to be categorical.

Question **8**

Complete

Mark 1 out of 1

Flag question

Question text

Two classes each of which is represented by the same pair of numeric attributes are linearly separable if

- ☐
- a.
At least one of the pairs of attributes shows a high positive correlation between the classes.
- ☐
- b.
At least one of the pairs of attributes shows a high positive correlation between the classes.
- ☒
- c.
A straight line partitions the instances of the two classes.
- ☐
- d.
At least one of the pairs of attributes shows a curvilinear relationship between the classes.

Question **9**

Not answered

Marked out of 1

Flag question

Question text

With Bayes theorem the probability of hypothesis H — specified by $P(H)$ — is referred to as



a.

An a priori probability



b.

A posterior probability



c.

A bidirectional probability



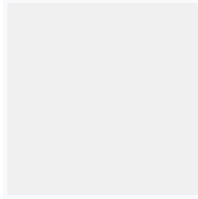
d.

A conditional probability

Question **10**

Complete

Mark 1 out of 1



Flag question

Question text

This technique associates a conditional probability value with each data instance.



a.

logistic regression



b.

simple regression



c.

linear regression



d.

multiple linear regression

Question **11**

Complete

Mark 0 out of 1

Flag question

Question text

Logistic regression is a _____ regression technique that is used to model data having a _____ outcome.

☐

a.
nonlinear, binary

☒

b.
linear, binary

☐

c.
nonlinear, numeric

☐

d.
linear, numeric

Question **12**

Complete

Mark 1 out of 1

Flag question

Question text

With Bayes classifier, missing data items are

☐

a.
Treated as equal compares.

☐

b.
Treated as unequal compares.

☐

c.
Replaced with a default value.

☒

d.
Ignored.

UNIT 2

Question 13

Complete

Mark 0 out of 1

Flag question

Question text

This supervised learning technique can process both numeric and categorical input attributes.

☐

a.
backpropagation learning

☐

b.
logistic regression

☒

c.
linear regression

☐

d.
Bayes classifier

Question 14

Complete

Mark 0 out of 1

Flag question

Question text

For Bayes theorem to be applied, the following relationship between hypothesis H and evidence E must hold.

☐

a.
 $P(H|E) + P(\sim H|E) = 1$

☐

b.
 $P(H|E) + P(H|\sim E) = 0$

☒

c.

$$P(H|E) + P(H|\sim E) = 1$$



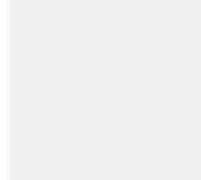
d.

$$P(H|E) + P(\sim H|E) = 0$$

Question **15**

Complete

Mark 1 out of 1



Flag question

Question text

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



a.

Minimize the sum of squared error differences between computed and actual output.



b.

Minimize the sum of absolute differences between computed and actual outputs.



c.

Minimize the number of times the test data must pass through the network.



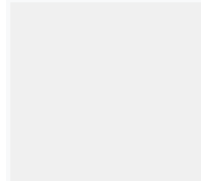
d.

Minimize the number of times the training data must pass through the network.

Question **16**

Complete

Mark 4 out of 5



Flag question

Question text

ANSWER ANY ONE

1.a EXPLAIN THE HIDDEN MARKOV MODEL with an example

or

1.b EXPLAIN ASSOCIATION RULES with an example

ANSWER:

AIS Algorithm

Candidate itemsets are generated and counted on-the-fly as the database is scanned.

For each transaction, it is determined which of the large itemsets of the previous pass are contained in this transaction.

New candidate itemsets are generated by extending these large itemsets with other items in this transaction.

The disadvantage of the AIS algorithm is that it results in unnecessarily generating and counting too many candidate itemsets that turn out to be small.

UNIT 2 AND 3

Question 1

Complete

Mark 1 out of 1

Flag question

Question text

___ attempts to identify and remove branches, with Improving accuracy



a.
tree pruning



b.
both of them



c.
decision tree



d.
none of above

Question 2

Complete

Mark 0 out of 1

Flag question

Question text

How do we perform Bayesian classification when some features are missing?

☒

a.

We assuming the missing values as the mean of all values.

☐

b.

Drop the features completely.

☐

c.

We integrate the posteriors probabilities over the missing features.

☐

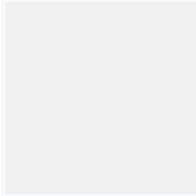
d.

We ignore the missing features.

Question **3**

Complete

Mark 1 out of 1



Flag question

Question text

Functions of the second phase of the partition algorithm are

☐

a.

None of these

☐

b.

Frequent itemsets are identified

☐

c.

Actual support of item sets are generated

☒

d.

Both (a) & (b)

Question **4**

Complete

Mark 1 out of 1

Flag question

Question text

Which of the following is FALSE about Correlation and Covariance?



a.
Correlation and covariance values are the same.



b.
Correlation is the standardized version of Covariance.



c.
The covariance and correlation are always the same sign.



d.
A zero correlation does not necessarily imply independence between variables.

Question **5**
Complete
Mark 0 out of 1

Flag question

Question text

Which of the following statement is TRUE about the Bayes classifier?



a.
Bayes classifier works on the Bayes theorem of probability.



b.
Bayes classifier is an unsupervised learning algorithm.



c.
Bayes classifier is also known as maximum apriori classifier.



d.
It assumes the independence between the independent variables or features.

Question **6**

Complete
Mark 0 out of 1

Flag question

Question text

In the Naive Bayes algorithm, suppose that prior for class w_1 is greater than class w_2 , would the decision boundary shift towards the region R_1 (region for deciding w_1) or towards region R_2 (region for deciding w_2)?

☐

a.
towards region R_1 .

☐

b.
No shift in decision boundary.

☐

c.
towards region R_2 .

☒

d.
It depends on the exact value of priors.

Question 7

Complete
Mark 1 out of 1

Flag question

Question text

How do you choose the right node while constructing a decision tree?

☐

a.
An attribute having high entropy

☒

b.
An attribute having the highest information gain.

☐

c.
An attribute having the lowest information gain.

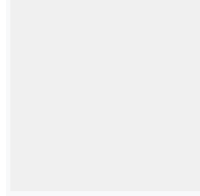
☐

d.
An attribute having high entropy and information gain

Question **8**

Complete

Mark 1 out of 1



Flag question

Question text

Hierarchical methods can be classified



a.

A and B



b.

Agglomerative Approach



c.

Divisive Approach



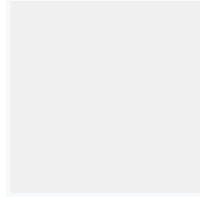
d.

None of these

Question **9**

Complete

Mark 1 out of 1



Flag question

Question text

Which of the following statement is TRUE?



a.

Outliers should be identified and removed always from a dataset.



b.

The nature of our business problem determines how outliers are used.



c.

Outliers can never be present in the testing dataset.



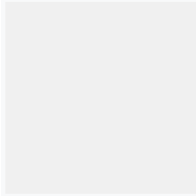
d.

Outliers is a data point that is significantly close to other data points.

Question **10**

Complete

Mark 1 out of 1



Flag question

Question text

What kind of distance metric(s) are suitable for categorical variables to find the closest neighbors?



a.

Manhattan distance.



b.

Minkowski distance.



c.

Hamming distance.



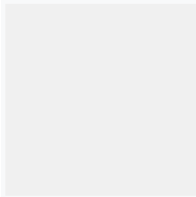
d.

Euclidean distance.

Question **11**

Complete

Mark 1 out of 1



Flag question

Question text

Classification and prediction method can be affected by:-



a.

All of the above



b.

Robustness & Scalability



c.
Interpretability

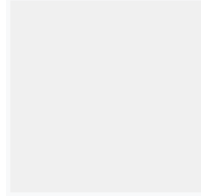
☐

d.
Accuracy & Speed

Question **12**

Complete

Mark 1 out of 1



Flag question

Question text

Recursive Partitioning stops in Decision Tree when

☐

a.
There are no samples for the branch test.

☐

b.
All samples for a given node belong to the same class.

☐

c.
There are no remaining attributes on which samples may be further partitioned.

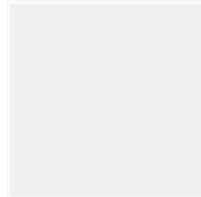
☒

d.
All the above.

Question **13**

Complete

Mark 1 out of 1



Flag question

Question text

Unsupervised learning is an example of

☒

a.
clustering

☐

b.
Data Mining



c.
Classification and prediction

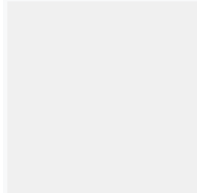


d.
Classification and Regression

Question **14**

Complete

Mark 0 out of 1



Flag question

Question text

In Regression modeling we develop a mathematical equation that describes how,
(Predictor-Independent variable, Response-Dependent variable)



a.
All of these are correct.



b.
one response and one or more predictors are related.



c.
one predictor and one or more response variables are related.

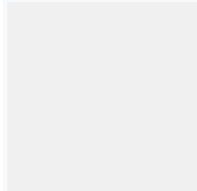


d.
several predictors and several response variables response are related.

Question **15**

Complete

Mark 1 out of 1



Flag question

Question text

Which one of the following statements is TRUE for a Decision Tree?



a.
In a decision tree, the entropy of a node decreases as we go down a decision tree.



- b.
In a decision tree, entropy determines purity.
☐
- c.
Decision tree is only suitable for the classification problem statement.
☐
- d.
Decision tree can only be used for only numeric valued and continuous attributes.

Question **16**

Complete

Mark 1 out of 1

Flag question

Question text

True or False: In a naive Bayes algorithm, when an attribute value in the testing record has no example in the training set, then the entire posterior probability will be zero.

- ☐
- a.
Can't determined
☐
- b.
None of these.
☒
- c.
True
☐
- d.
False

Question **17**

Complete

Mark 1 out of 1

Flag question

Question text

The robotic arm will be able to paint every corner in the automotive parts while minimizing the quantity of paint wasted in the process. Which learning technique is used in this problem?



a.
Both (A) and (B).



b.
Supervised Learning.



c.
Unsupervised Learning.



d.
Reinforcement Learning.

Question **18**

Complete

Mark 1 out of 1

Flag question

Question text

Which of the following is FALSE about Deep Learning and Machine Learning algorithms?



a.
Feature Extraction needs to be done manually in both ML and DL algorithms.



b.
Deep Learning algorithms work efficiently on a high amount of data.



c.
Deep Learning algorithms require high computational power.



d.
Deep Learning algorithms are best suited for unstructured data.

Question **19**

Complete

Mark 1 out of 1

Flag question

Question text

In a decision tree internal node denotes a test on an attribute and Leaf nodes represent classes or class distributions



a.
True



b.
False

Question **20**

Complete

Mark 1 out of 1

Flag question

Question text

The process used to remove or reduce noise and the treatment of missing values



a.
Data cleaning



b.
Data transformation



c.
Relevance analysis



d.
None of above

Question **21**

Complete

Mark 0 out of 1

Flag question

Question text

Decision tree is based on



a.

Top-down technique

☐

b.

Bottom-down technique

☐

c.

Divide-and-conquer manner

☐

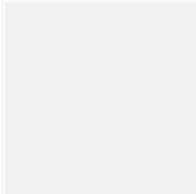
d.

Top-down recursive divide-and-conquer manner

Question **22**

Complete

Mark 1 out of 1



Flag question

Question text

Top-Down Approach is

☒

a.

Divisive Approach

☐

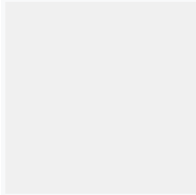
b.

Agglomerative Approach

Question **23**

Complete

Mark 1 out of 1



Flag question

Question text

Advantage of the Information-theoretic approach of the decision tree is

☐

a.

Maximizes the number of tests

☐

b.

Minimizes the number of Nodes

☒

c.
Minimizes the expected number of tests needed

☐

d.
Maximizes the number of nodes

Question **24**

Complete

Mark 0 out of 1

Flag question

Question text

Which of the following logic function cannot be implemented by a perceptron having 2 inputs?

☐

a.
OR.

☒

b.
AND.

☐

c.
NOR.

☐

d.
XOR.

Question **25**

Complete

Mark 0 out of 1

Flag question

Question text

Which of the following activation function output is zero centered?

☐

a.
Sigmoid.

☐

b.

Hyperbolic Tangent.

☒

c.

Rectified Linear unit(ReLU).

☐

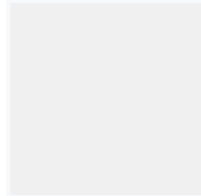
d.

Softmax.

Question **26**

Complete

Mark 1 out of 1



Flag question

Question text

Test attribute for the current node in the decision tree is chosen on the basis of

☐

a.

Lowest Attribute Gain

☒

b.

Highest Information Gain

☐

c.

Lowest entity gain

☐

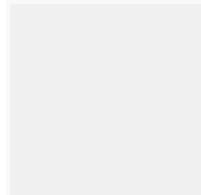
d.

Highest data gain

Question **27**

Complete

Mark 1 out of 1



Flag question

Question text

In the First Phase of the Partition Algorithm

☐

a.

Not divides into partitions

☐

- b.
Logically divides into a number of overlapping Partitions
☐
- c.
Divides into non-logically and non-overlapping Partitions
☒
- d.
Logically divides into a number of non-overlapping partitions
☐

Question **28**

Complete

Mark 1 out of 1

Flag question

Question text

Which are the two type of Hierarchical Clustering?

- ☒
- a.
Agglomerative Hierarchical Clustering and Divisive Hierarchical Clustering
☐
- b.
Agglomerative Hierarchical Clustering and Density Hierarchical Clustering
☐
- c.
Divisive Hierarchical Clustering and Density Hierarchical Clustering
☐
- d.
None of the above
☐

Question **29**

Complete

Mark 0 out of 1

Flag question

Question text

To select the test attribute of each node in a decision tree we use

- ☐
- a.
Data Selection Measure
☐



b.
None of these



c.
Information Gain Measure

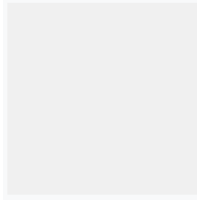


d.
Entity Selection Measure

Question **30**

Complete

Mark 0 out of 1



Flag question

Question text

Partition Algorithm executes in



a.
None of these



b.
Two-Phase



c.
Three phase



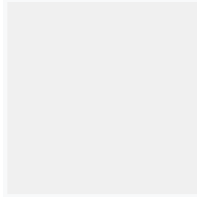
d.
One phase

UNIT 4

Question **1**

Complete

Mark 1.00 out of 1.00



Flag question

Question text

Suppose the number of nodes in the input layer is 5 and the hidden layer is 10. The maximum number of connections from the input layer to the hidden layer would be-

☐

a.
Less than 50

☐

b.
None

☐

c.
More than 50

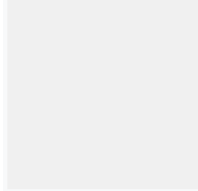
☒

d.
50

Question **2**

Complete

Mark 1.00 out of 1.00



Flag question

Question text

Neural networks can be used in-

☒

a.
All of the above

☐

b.
Classification problems

☐

c.
Clustering problems

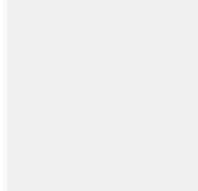
☐

d.
Regression problems

Question **3**

Complete

Mark 1.00 out of 1.00



Flag question

Question text

In a neural network, which of the following causes the loss not to decrease faster?

☐

a.

Slow learning rate

☒

b.

All of the above

☐

c.

Stuck at a local minima

☐

d.

High regularization parameter

Question **4**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

The multi-armed bandit problem is a generalized use case for-

☐

a.

All of the above

☐

b.

Supervised learning

☐

c.

Reinforcement learning

☒

d.

Unsupervised learning

Question **5**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

Which of the following is a deep learning library?

☒

a.

Tensorflow

☐

b.
PyTorch

☐

c.
All of the above

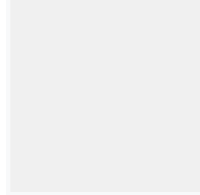
☐

d.
Keras

Question **6**

Complete

Mark 1.00 out of 1.00



Flag question

Question text

For a binary classification problem, which of the following activation function is used?

☐

a.
Softmax

☒

b.
Sigmoid

☐

c.
None

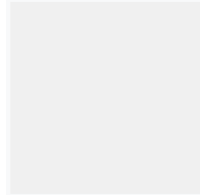
☐

d.
ReLu

Question **7**

Complete

Mark 1.00 out of 1.00



Flag question

Question text

Which of the following is a correct order for the Convolutional Neural Network operation?

☐

a.
Max pooling -> convolution -> flattening -> full connection

☐

b.
None



c.
Convolution -> max pooling -> flattening -> full connection

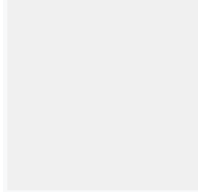


d.
Flattening -> max pooling -> convolution -> full connection

Question 8

Complete

Mark 1.00 out of 1.00



Flag question

Question text

Which of the following is true about bias?



a.
None



b.
Bias impacts the output of the neurons



c.
Both A and B

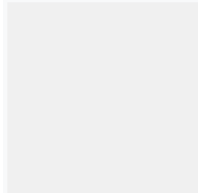


d.
Bias is inherent in any predictive model

Question 9

Complete

Mark 1.00 out of 1.00



Flag question

Question text

Which of the following is true about reinforcement learning?



a.
The agent gets rewards or penalty according to the action



b.
All of the above



c.

It's an online learning

☐

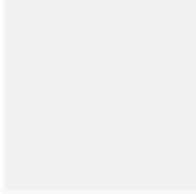
d.

The target of an agent is to maximize the rewards

Question **10**

Complete

Mark 1.00 out of 1.00



Flag question

Question text

Which of the following neural network model has a shared weight structure?

☒

a.

Both A and B

☐

b.

Recurrent Neural Network

☐

c.

Convolution Neural Network

☐

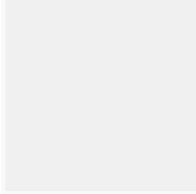
d.

None

Question **11**

Complete

Mark 0.00 out of 1.00



Flag question

Question text

Thompson sampling is a-

☐

a.

Probabilistic algorithm

☐

b.

All of the above

☒

c.

Based on Bayes inference rule

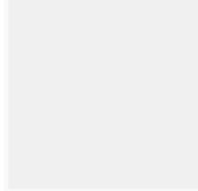
☐

d.
Reinforcement learning algorithm

Question **12**

Complete

Mark 1.00 out of 1.00



Flag question

Question text

Autoencoder is an example of-



a.
Deep learning



b.
Machine learning



c.
Data mining

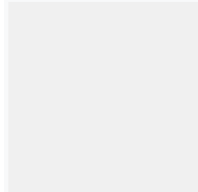


d.
None

Question **13**

Complete

Mark 1.00 out of 1.00



Flag question

Question text

Which algorithm is used in robotics and industrial automation?



a.
Naive Bayes



b.
Thompson sampling



c.
Decision tree



d.
All of the above

Question **14**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

LSTM is a variation of-

☐

a.
Multi Layer Perceptron Network

☐

b.
None

☐

c.
Convolutional Neural Network

☒

d.
Recurrent Neural Network

Question **15**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Which of the following makes a neural network non-linear?

☒

a.
Rectified linear unit

☐

b.
Batch gradient descent

☐

c.
All of the above

☐

d.
Convolution function

Question **16**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

What is gradient descent?

☐

a.
Loss function

☐

b.
Activation function

☒

c.
Optimization algorithm

☐

d.
None

Question **17**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Which of the following is true about neurons?

☐

a.
A neuron has multiple inputs and multiple outputs

☐

b.
A neuron has a single input and only single output

☒

c.
All of the above

☐

d.
A neuron has a single input and multiple outputs

Question **18**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Which of the following is an application of reinforcement learning?

☒

a.
Recommendation system

☐

b.
Pattern recognition

☐

c.
Topic modeling

☐

d.
Image classification

Question **19**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Which of the following steps can be taken to prevent overfitting in a neural network?

☐

a.
Dropout of neurons

☒

b.
All of the above

☐

c.
Early stopping

☐

d.
Batch normalization

Question **20**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Which of the following is a loss function?

☐

a.
Sigmoid function

☐

b.
All of the above

☐

c.
ReLu

☒

d.
Cross entropy

Question **21**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

Which of the following activation function can not be used in the output layer of an image classification model?

☐

a.
Softmax

☐

b.
None

☐

c.
ReLu

☒

d.
Sigmoid

Question **22**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Which of the following is false about Upper confidence bound?

☐

a.
It's a Deterministic algorithm

☐

b.
It does not allow delayed feedback

☐

c.
It is not based on Bayes inference

☒

d.
None

Question **23**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

What does a gradient descent algorithm do?

☐

a.
None

☒

b.
Tries to find the parameters of a model that minimizes the cost function

☐

c.
Adjusts the weights at the input layers

☐

d.
Both A and B

Question **24**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

For an image classification task, which of the following deep learning algorithm is best suited?

☐

a.
All of the above

☐

b.
Recurrent Neural Network

☐

c.
Multi-Layer Perceptron

☒

d.
Convolution Neural Network

Question **25**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Which of the following is true about dropout?

☐

a.
Applied in the output layer nodes

☐

b.
None

☒

c.
Applied in the hidden layer nodes

☐

d.
Both A and B

Question **26**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Upper confidence bound is a

☐

a.
None

☒

b.
Reinforcement algorithm

☐

c.
Unsupervised algorithm

☐

d.
Supervised algorithm

Question **27**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

In a classification problem, which of the following activation function is most widely used in the output layer of neural networks?

☐

a.
Rectifier function

☐

b.
All of the above

☐

c.
Hyperbolic function

☒

d.
Sigmoid function

Question **28**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

Batch normalization helps to prevent-

☐

a.
None

☐

b.
Both A and B

☐

c.
activation functions to become too high or low

☒

d.
the training speed to become too slow

Question **29**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Suppose you have a dataset from where you have to predict three classes. Then which of the following configuration you should use in the output layer?

☐

a.
Activation function = sigmoid, loss function = mean squared error

☐

b.
Activation function = sigmoid, loss function = cross entropy

☐

c.
Activation function = softmax, loss function = mean squared error

☒

d.
Activation function = softmax, loss function = cross entropy

Question **30**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

Hidden Markov Model is used in-

☐

a.
All of the above

☐

b.
Supervised learning

☒

c.
Reinforcement learning

☐

d.
Unsupervised learning

Question **31**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Reinforcement learning is-

☐

a.
None

☐

b.
Supervised learning

☒

c.
Award based learning

☐

d.
Unsupervised learning

Question **32**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Which of the following neural networks is the best for machine translation?

☐

a.
1D Convolutional Neural Network

☐

b.
2D Convolutional Neural Network

☒

c.
Recurrent Neural Network

☐

d.
None

Question **33**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Which of the following neural networks has a memory?

☒

a.
LSTM

☐

b.
1D CNN

☐

c.
None

☐

d.
2D CNN

Question **34**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Which of the following loss function is used in regression?

☐

a.
Logarithmic loss

☐

b.
Cross entropy

☒

c.
Mean squared error

☐

d.
None

Question **35**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

What is the purpose of a loss function?

☐

a.
None

☐

b.
Calculate the error value of the forward network

☐

c.
Optimize the error values according to the error rate

☒

d.
Both A and B

Question **36**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Which of the following is an example of deep learning?

☐

a.
Self-driving cars

☐

b.
Natural language processing

☐

c.
Pattern recognition

☒

d.
All of the above

Question **37**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Which of the following deep learning models uses back propagation?

☒

a.
Recurrent Neural Network

☐

b.
Multilayer Perceptron Network

☐

c.
All of the above

☐

d.
Convolutional Neural Network

Question **38**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

You have a task which is to show relative ads to target users. Which algorithm you should use for this task?

☐

a.
K means clustering

☒

b.
Upper confidence bound

☐

c.
Naive Bayes

☐

d.
Support vector machine

Question **39**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Which of the following statement is not correct?

☐

a.
Neural networks mimic the human brain

☐

b.
None

☐

c.
It can be used in image processing

☒

d.
It can only work for a single input and a single output

Question **40**

Complete

Mark 0.00 out of 1.00

Flag question

Question text

Convolutional Neural Network is used in-



a.
Computer vision



b.
All of the above



c.
Text classification



d.
Image classification

Question **41**

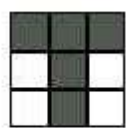
Not answered

Marked out of 5.00

Flag question

Question text

The network shown in Figure 1 is trained to recognize the characters H and T as shown below: What Deep learning algorithm could be used for this scenario and why ? Elaborate the answer with its steps and working Example?(5 marks)

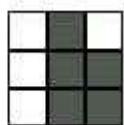


INPUT



OUTPUT

If the following pattern was given

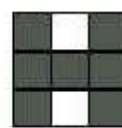


INPUT

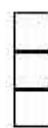


?

OUTPUT



INPUT



OUTPUT



Question **42**
Complete
Mark 3.00 out of 5.00

Flag question

Question text

Why is an RNN (Recurrent Neural Network) used for machine translation, say translating English to French?

Elaborate the process in steps to validate the answer.

Answer:

1. RNNs are designed to take sequences of text as inputs or return sequences of text as outputs, or both.
2. They're called recurrent because the network's hidden layers have a loop in which the output and cell state from each time step become inputs at the next time step.
3. This recurrence serves as a form of memory. It allows contextual information to flow through the network so that relevant outputs from previous time steps can be applied to network operations at the current time step.

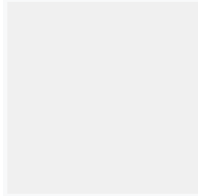
1. Preprocessing: load and examine data, cleaning, tokenization, padding
2. Modeling: build, train, and test the model
3. Prediction: generate specific translations of English to French, and compare the output translations to the ground truth translations

UNIT 5

Question 1

Complete

Mark 0.00 out of 2.00



Flag question

Question text

You are designing a deep learning system to detect driver fatigue in cars. It is crucial that that your model detects fatigue, to prevent any accidents. Which of the following is the most appropriate evaluation metric: Accuracy, Precision, Recall, Loss Value. Explain your choice.

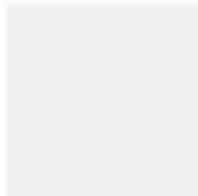
Answer:

It is important that we do not miss any cases where the driver is tired

Question 2

Complete

Mark 0.00 out of 2.00



Flag question

Question text

You are given the following piece of code for forward propagation through a single hidden layer in a neural network. This layer uses the sigmoid activation. Identify and correct the error.

```
import numpy as np

def forward_prop(W, a_prev, b):
    z = W*a_prev + b
    a = 1/(1+np.exp(-z)) #sigmoid

return a
```

Answer:

$z = \text{np.matmul}(W, a_prev) + b$ OR $z = \text{np.dot}(W, a_prev) + b$

Question 3

Complete

Mark 0.00 out of 1.00

Flag question

Question text

TensorFlow is imported as?



a.

Run tf



b.

Import TensorFlow as tf



c.

Run TensorFlow



d.

Import TensorFlow

Question **4**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Which, if any, of the following propositions is true about fully-connected neural networks (FCNN)?



a.

In a FCNN, the most common weight initialization scheme is the zero initialization, because it leads to faster and more robust training.

☐

b.

None of the above

☐

c.

In a FCNN, there are connections between neurons of a same layer.

☒

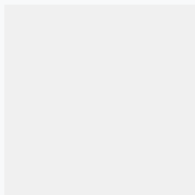
d.

A FCNN with only linear activations is a linear network.

Question **5**

Complete

Mark 1.00 out of 1.00



Flag question

Question text

The input image has been converted into a matrix of size 28 X 28 and a kernel/filter of size 7 X 7 with a stride of 1. What will be the size of the convoluted matrix?

☐

a.

20x20

☐

b.

21x21

☐

c.

25x25



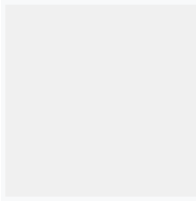
d.

22x22

Question **6**

Not answered

Marked out of 1.00



Flag question

Question text

Assume a simple MLP model with 3 neurons and inputs= 1,2,3. The weights to the input neurons are 4,5 and 6 respectively. Assume the activation function is a linear constant value of 3. What will be the output?



a.

96



b.

32



c.

128



d.

64

Question **7**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

In CNN, having max pooling always decrease the parameters?



a.

False



b.

True



c.

Can be true or false



d.

Cannot say

Question **8**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

In which of the following applications can we use deep learning to solve the problem?



a.

Protein structure prediction



b.

Prediction of chemical reactions



c.

Detection of exotic particles



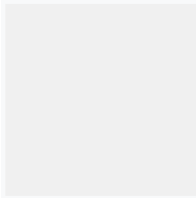
d.

All of the above

Question **9**

Complete

Mark 1.00 out of 1.00



Flag question

Question text

In which neural net architecture, does weight sharing occur?



a.

Convolutional neural Network



b.

Recurrent Neural Network



c.

Fully Connected Neural Network



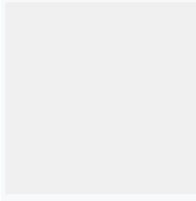
d.

Both 1 and 2

Question **10**

Complete

Mark 0.00 out of 1.00



Flag question

Question text

How many layers Deep learning algorithms are constructed?



a.

5



b.

2



c.

3



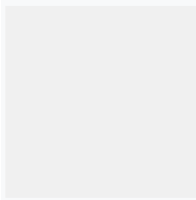
d.

4

Question **11**

Complete

Mark 1.00 out of 1.00



Flag question

Question text

Deep learning algorithms are _____ more accurate than machine learning algorithm in image classification.



a.

0.41

☐

b.

33%

☐

c.

0.4

☐

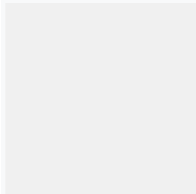
d.

0.37

Question **12**

Complete

Mark 1.00 out of 1.00



Flag question

Question text

Which of the following functions can be used as an activation function in the output layer if we wish to predict the probabilities of n classes (p_1, p_2, \dots, p_k) such that sum of p over all n equals to 1?

☐

a.

Sigmoid

☒

b.

Softmax

☐

c.

Tanh



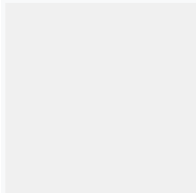
d.

ReLu

Question **13**

Complete

Mark 1.00 out of 1.00



Flag question

Question text

Which of the following statements is true when you use 1×1 convolutions in a CNN?



a.

It can help in dimensionality reduction



b.

It suffers less overfitting due to small kernel size



c.

All of the above



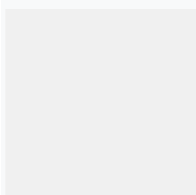
d.

It can be used for feature pooling

Question **14**

Complete

Mark 1.00 out of 1.00



Flag question

Question text

In a simple MLP model with 8 neurons in the input layer, 5 neurons in the hidden layer and 1 neuron in the output layer. What is the size of the weight matrices between hidden output layer and input hidden layer?

☐

a.

[1 X 5] , [5 X 8]

☒

b.

[5 x 1] , [8 X 5]

☐

c.

[8 X 5] , [5 X 1]

☐

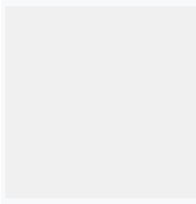
d.

[8 X 5] , [1 X 5]

Question **15**

Complete

Mark 0.00 out of 1.00



Flag question

Question text

Which neural network has only one hidden layer between the input and output?

☐

a.

Deep neural network

☒

b.

Shallow neural network



c.

Feed-forward neural networks



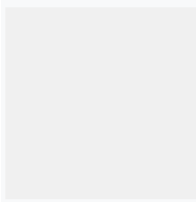
d.

Recurrent neural networks

Question **16**

Complete

Mark 1.00 out of 1.00



Flag question

Question text

The number of nodes in the input layer is 10 and the hidden layer is 5. The maximum number of connections from the input layer to the hidden layer are



a.

50



b.

less than 50



c.

more than 50



d.

It is an arbitrary value

Question **17**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

Which of the following is/are Limitations of deep learning?



a.

Obtain huge training datasets



b.

Data labeling



c.

both 1 and 2



d.

None of the above

Question **18**

Complete

Mark 1.00 out of 1.00

Flag question

Question text

RNNs stands for?



a.

Recurrent neural networks



b.

Receives neural networks

☐

c.

Receives neural networks

☐

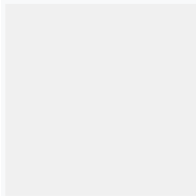
d.

Recording neural networks

Question **19**

Complete

Mark 1.00 out of 1.00



Flag question

Question text

Which of the following would have a constant input in each epoch of training a Deep Learning model?

☐

a.

Weight between hidden and output layer

☐

b.

Activation function of output layer

☐

c.

Biases of all hidden layer neurons

☒

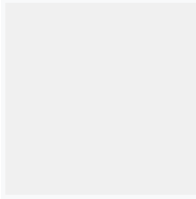
d.

Weight between input and hidden layer

Question **20**

Complete

Mark 1.00 out of 1.00



Flag question

Question text

Which of the following is well suited for perceptual tasks?



a.

Reinforcement Learning



b.

Feed-forward neural networks



c.

Recurrent neural networks



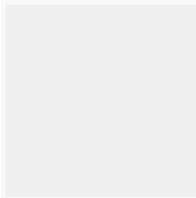
d.

Convolutional neural networks

Question **21**

Complete

Mark 0.00 out of 1.00



Flag question

Question text

Which of the following methods DOES NOT prevent a model from overfitting to the training set?



a.

Data augmentation

☐

b.

Dropout

☐

c.

Pooling

☒

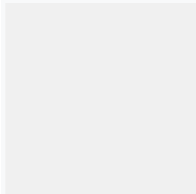
d.

Early stopping

Question **22**

Complete

Mark 1.00 out of 1.00



Flag question

Question text

Sentiment analysis using Deep Learning is a many-to one prediction task

☐

a.

False

☐

b.

Can be true or false

☐

c.

Cannot say

☒

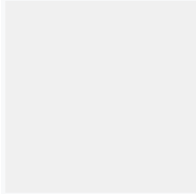
d.

True

Question **23**

Complete

Mark 1.00 out of 1.00



Flag question

Question text

Assume that your machine has a large enough RAM dedicated to training neural networks. Compared to using stochastic gradient descent for your optimization, choosing a batch size that fits your RAM will lead to::



a.

a less precise but faster update.



b.

a more precise and faster update.



c.

a less precise and slower update.



d.

a more precise but slower update.