TOC AND ML QUESTIONS FOR COMPREHENSIVE TECHNICAL REPORT (WITH SOLUTIONS)

SUBMITTED BY : 2015103624(ESHANI ANAND)
: 2015103600(POOJA GANESH)

THEORY OF COMPUTATION

ESHANI ANAND (2015103624)

1. The entity which generate Language is termed as:

a)Automata
b)Tokens
c)Grammar
d)Data

Answer : C

2. Which of the following statement is false?

a) Context free language is the subset of context sensitive language
b) Regular language is the subset of context sensitive language
c) Recursively enumerable language is the super set of regular language
d) Context sensitive language is a subset of context free language

Answer : D

3.The Grammar can be defined as: G=(V, ∑,p, S) In the given definition, what does S represents?

a) Accepting State
b) Starting Variable
c) Sensitive Grammar
d) None of these

Answer : B

4.Regular expressions are closed under

a) Union
b) Intersection
c) Kleen star
d) All of the mentioned

Answer : D

5.Regular sets are closed under union,concatenation and kleene closure.

a)True
b)False
c)Depends on regular set
d)Can't say

Answer : A

6. Complement of a DFA can be obtained by

a) making starting state as final state.
b) no trival method.
c) making final states non-final and non-final to final.
d) make final as a starting state.

Answer : C

7.A language is regular if and only if

a) accepted by DFA
b) accepted by PDA
c) accepted by LBA
d) accepted by Turing machine

Answer : A

8. Which of the following is true?

a) Every subset of a regular set is regular
b) Every finite subset of non-regular set is regular
c) The union of two non regular set is not regular
d) Infinite union of finite set is regular

Answer : B

9.Grammar that produce more than one Parse tree for same sentence is:

a) Ambiguous
b) Unambiguous
c) Complementation
d) Concatenation Intersection

Answer : A

10.The language accepted by a Push down Automata:

a) Type0
b) Type1
c) Type2
d) Type3

Answer : C

MACHINE LEARNING :

POOJA GANESH (2015103600)

1.Which of the following distance metric cannot be used in K-Neural Network?

a.Manhattan
b.Minkowski
c.Mahalanobis
d.all above can be used

Answer : d

2.Manhattan distance is used for

a.continuous variables
b.categorical variables
c.both a and b
d.none of these

Answer : a

3.Which of the following is an example of deterministic algorithm ?

a.Principal Component Analysis
b.Kmeans
c.both a and b
d.None of above

Answer : a

4.Which of the following hyperparameter when increased may cause random forest to overfit the data ?

a. number of trees
b. depth of tree
c. learning rate
d. all of these

Answer : b

5.Entropy value ranges from

a.0 to 1
b.0 to 100
c.1 to 100
d.-1 to +1

Answer : a

6. Which of the following is/are true about boosting trees?
1) In boosting trees, individual weak learners are independent of each other
2) It is the method for improving the performance by aggregating the results of weak learners

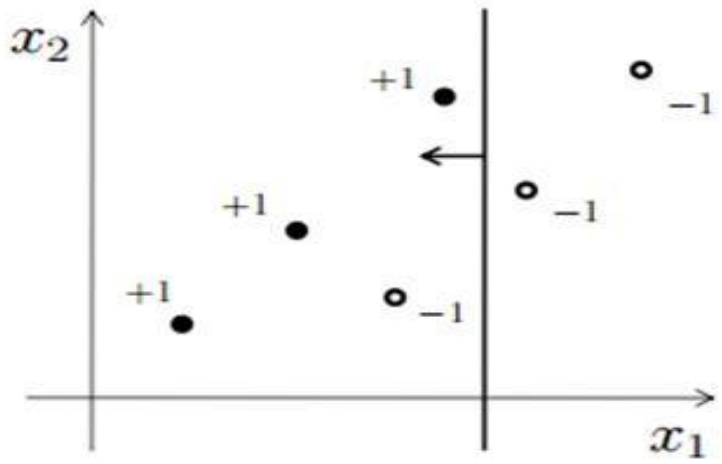
a. 1
b. 2
c. 1 and 2
d. None of these

Answer : b

7.In the figure, X1 and X2 are the two features and the data point is represented by dots (-1 is negative class and +1 is a positive class).

How many data points are misclassified in below image?

a. 1
b. 2
c. 3
d. 4



Answer : a

8.How to select best hyperparameters in tree based models?

a.Measure performance over training data
b.Measure performance over validation data
c.Both of these
d.None of these

Answer : b

9.Which of the following method would result into better class prediction?

a. Building a classification algorithm with PCA (A principal component in direction of PCA)
b. Building a classification algorithm with LDA
c. Can't say
d. None of these

Answer : b

10.Which of the following algorithm doesn't uses learning Rate as of one of its hyperparameter?
1.Gradient Boosting
2.Extra Trees
3.AdaBoost

4.Random Forest

a. 1 and 3
b. 1 and 4
c. 2 and 3
d. 2 and 4

Answer : d

----------X----------