

1. Q- Generate the decision tree for the following data (8)

Weekend	Weather	Parents	Money	Decision
W1	Sunny	Yes	Rich	Cinema
W2	Sunny	No	Rich	Tennis
W3	Windy	Yes	Rich	Cinema
W4	Rainy	Yes	Poor	Cinema
W5	Rainy	No	Rich	Stay In
W6	Rainy	Yes	Poor	Cinema
W7	Windy	No	Poor	Cinema
W8	Windy	No	Rich	Shopping
W9	Windy	Yes	Rich	Cinema
W10	Sunny	No	Rich	Tennis

2. Q- Explain Hyperplane and Margin in Support Vector Machines. Find out the hyperplane for the below set of data points (8)

Positively labelled data points	3,1	3,-1	6,1	6,-1
Negatively labelled data points	1,0	0,1	0,-1	-1,0

3. Q:- Suppose Dataset is

Person	Covid	Flu	Fever
1	Yes	No	Yes
2	No	Yes	Yes
3	Yes	Yes	Yes
4	No	No	No
5	Yes	No	Yes
6	No	No	Yes
7	Yes	No	Yes
8	Yes	No	No
9	No	Yes	Yes
10	No	Yes	No

Given Person(Flu=Yes, Covid=Yes).Find out whether this person has fever or not using Naive Bayes Classification Algorithm. (8)

4. Write Short Note On (Any Two):

a) Distributed Learning and Online Learning
 b) K-means Algorithm
 c) Difference between Artificial Intelligence and Machine Learning (6)