

Jaypee University of Engineering & Technology, Guna**T-3 (Even Semester 2022)****18B11CI918 – MACHINE LEARNING**

Maximum Duration: 2 Hours

Maximum Marks: 35

Notes:

1. This question paper has five questions.
2. Write relevant answers only.
3. Do not write anything on question paper (Except your Er. No.).

Q1.

What is pasting? Create a dataset using pasting concept from the dataset given below.

**Marks
[07]**

ID	F1	F2	F3	T
1.	Y	N	125	0
2.	Y	Y	156	1
3.	N	Y	111	1
4.	N	N	90	0

Q2.Create three stumps from the dataset given below. Assume the best value for W_t is 176.**[07]**

ID	CP	BR	Wt	Hd
1.	Y	Y	205	1
2.	N	Y	180	1
3.	Y	N	210	1
4.	Y	Y	167	1
5.	N	Y	156	0
6.	N	Y	125	0
7.	Y	N	168	0
8.	Y	Y	172	0

 $w_t < 176$

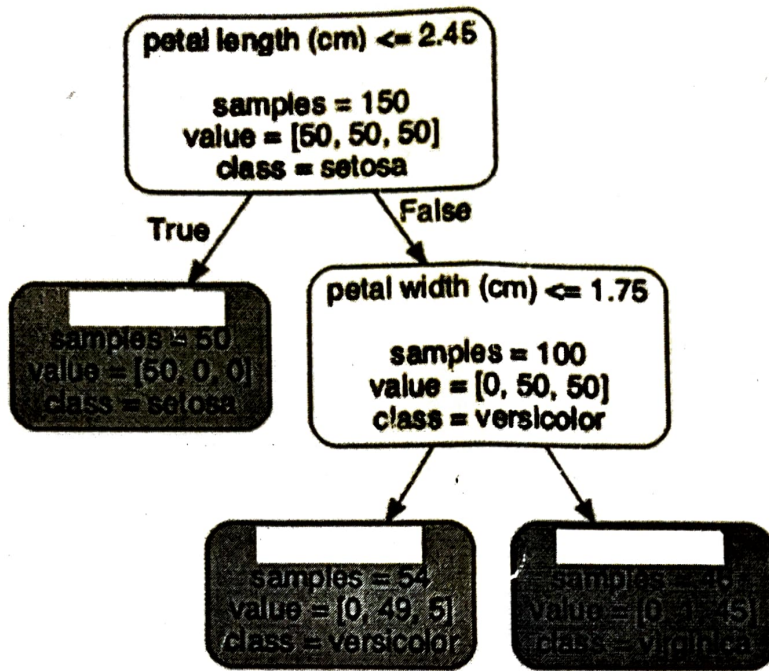
Compute the amount of say of each stump.

Q3.Explain the role of hyper-parameter *learning rate* in gradient boosting with the help of neat figures.**[07]**

Q4.

Show the Entropy calculation steps for each node in the tree shown below.

[07]



Q5.

Write short notes on the following:

(a) Support Vector Machine

[4]

(b) Minibatch Gradient Descent

[3]