School of Computer Science Engineering and Technology

Course- B.TECH	Type- AI Core-1
Course Code- **CSET211**	Course Name- **Statistical Machine Learning**
Year- Second	Semester- ODD
Date- 19/09/2022	Batch- CSE 3rd Semester

Lab Assignment (19st Sep – 23rd Sep 2022)

Lab 6 – SVM classifier and minimax algorithm (2 marks)

Objective: Student will be able to learn how to implement support vector machine classifier with different hyper parameters and implement minimax algorithm.

Exp. No.	Name	CO1	CO2	CO3
06	SVM classifier and Minimax algorithm			✓

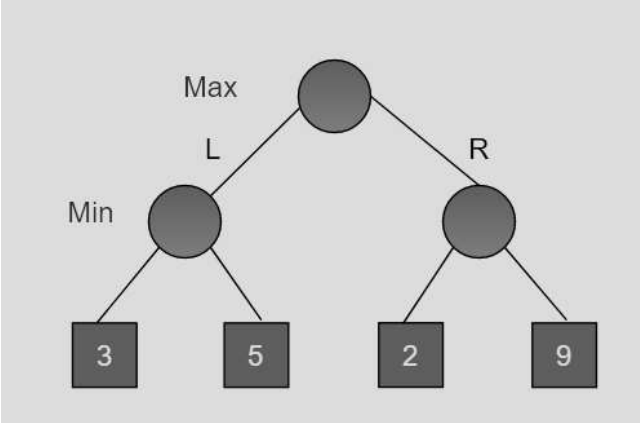
Question -1: **Marks: 1, Time: 45 min**

Consider the dataset "**iris.csv**", includes three iris species with 50 samples each as well as some properties about each flower. One flower species is linearly separable from the other two, but the other two are not linearly separable from each other.

1. **Load the data directly from sklearn Datasets.**
2. **Classify the species of a flower using SVM classifier.**
3. **Change the default kernel from linear to polynomial and radial basis and sigmoid kernel.**
4. **Change the hyper parameters (gamma and C) values for radial basis kernel to find the best accuracy score.**
5. **Visualise the result.**

Question -2: **Marks: 1, Time: 45 min**

Consider the following game tree.



1. **Find the optimal move to Maximizer to get the maximum points by implementing Minimax algorithm.**
2. **Print the optimum value by maximizer.**

Question -3: Practice question

Implement SVM classifier with polynomial kernel to estimate the Delay in AIDS Reporting with the dataset "AIDS2.CSV".