



IT 345 (BSC)- ARTIFICIAL INTELLIGENCE

UNIT TEST 02

Date:

Time:

INSTRUCTIONS:

- ✓ **Time Duration: 2 hours (120 minutes)**
- ✓ **Format: Python file**
- ✓ **Total marks: 50 marks**
- ✓ **Contribution to the final: 15 marks**

You are working on a project to develop an AI model for classifying iris flowers based on their sepal and petal dimensions. The dataset you'll be using is the famous Iris dataset, which contains measurements of sepal length, sepal width, petal length, and petal width for three species of iris flowers: Setosa, Versicolor, and Virginica.

1. Load the Iris dataset and split the dataset into training and testing sets with a ratio of 80:20. **(10 Marks)**
2. Choose a classification algorithm suitable for this task (e.g., Decision Trees, Support Vector Machines, or K-Nearest Neighbors).
3. Train the chosen model on the training data and evaluate its performance on the testing data. **(20 Marks)**
4. Evaluate the trained model using appropriate evaluation metrics such as accuracy, precision, recall, and F1-score. **(5 Marks)**
5. Visualize the confusion matrix to understand the model's performance in classifying each iris species. **(5 Marks)**
6. Discuss the strengths and weaknesses of the chosen classification algorithm based on the results obtained. **(10 Marks)**

--End--