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| **SISTec Logo-Revised (1).png** | | **SAGAR INSTITUTE OF SCIENCE & TECHNOLOGY(SISTec)**  **DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**  **TUTORIALS** |
| **BRANCH** | **CSE** |
| **SESSION** |  |
| **NA NAME OF THE FACULTY:**  **SUBJECT/CODE: Machine Learning/CS-601** | | |

**UNIT-1**

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| **Q No.** | **QUESTIONS** | **Bloom’s Taxonomy Level** |
| **1.** | Que 1: Some of the problems below are best addressed using a supervised learning algorithm, and the others with an unsupervised learning algorithm. Which of the following would you apply supervised learning to & why?   * Examine the statistics of two football teams, and predict which team will win tomorrow's match (given historical data of teams' wins/losses to learn from). * Examine a large collection of emails that are known to be spam emails, to discover if there are sub-types of spam mail. * Take a collection of 1000 essays written on the US Economy, and find a way to automatically group these essays into a small number of groups of essays that are somehow "similar" or "related". * Given genetic (DNA) data from a person, predict the odds of him/her developing diabetes over the next 10 years. | 4(Analyze) |
| **2.** | Que 2: Would you treat the following as a classification or a regression problem? Also, specify the reason.   * Suppose you are working on weather prediction, and your weather station makes one of three predictions for each day's weather: Sunny, Cloudy or Rainy. You'd like to use a learning algorithm to predict tomorrow's weather. * Suppose you are working on stock market prediction, typically tens of millions of shares of Microsoft stock are traded (i.e., bought/sold) each day. You would like to predict the number of Microsoft shares that will be traded tomorrow. | 4(Analyze) |

**UNIT-II**

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| **Q No.** | **QUESTIONS** | **Bloom’s Taxonomy Level** |
| **1.** | Consider the following dataset for the prediction of housing prizes.  a) What are the features of this dataset?  b) Specify the numeric and categorical attributes.  c) In the given plot, Comment about the highest-lowest as well as positive-negative correlations between the features by looking at the following graph: | 4(Analyze) |
| **2.** | By applying back propagation algorithm and calculate thevalues of updated weights for one cycle using sigmoid Activation Function. | 3(Apply) |

**UNIT-III**

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| **Q No.** | **QUESTIONS** | **Bloom’s Taxonomy Level** |
| **1.** | Consider the block diagram given below:  page58image26260896  Comment about the following statement in reference to the block diagram: Convolutional Neural Network (CNN) is the regularized version of Multilayer Perceptron (MLP). | 3(Apply) |
| **2.** | Specify the type of pooling used in the given diagrams:  page62image26536720 | 3(Apply) |

**UNIT-IV**

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| **Q No.** | **QUESTIONS** | **Bloom’s Taxonomy Level** |
| **1.** | What are the various ways in which depth can be added to a Recurrent Neural Network (RNN)? | 3(Apply) |
| **2.** | Examine the problem of long term dependencies in the following diagram:  page71image26593936 | 4(Analyze) |

**UNIT-V**

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| **Q No.** | **QUESTIONS** | **Bloom’s Taxonomy Level** |
| **1.** | Eloborate support vectors in SVM with respect to the given diagram:  page30image26398368page30image26408144 | 3(Apply) |
| **2.** | What is ‘Naive’ in a Naive Bayes? | 2(Understand) |