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**PRESIDENCY UNIVERSITY**

**Bengaluru**

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| **Ph.D. Course Work End Term Examinations – JAN-FEB 2025** |
| **Date:** 31- 01- 2025 **Time:** 09:30 am – 12:30 pm |

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| **School:** SOE | **Program:** Ph.D. | |
| **Course Code:** EEE812 | **Course Name:** Role of Data Analytics & Machine Learning In Power System | |
| **Semester**: | **Max Marks**:100 | **Weightage**:50% |

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| --- | --- | --- | --- | --- | --- |
| **CO - Levels** | **CO1** | **CO2** | **CO3** | **CO4** | **CO5** |
| **Marks** | **20** | **30** | **10** | **30** | **10** |

**Instructions:**

1. *Read all questions carefully and answer accordingly.*
2. *Do not write anything on the question paper other than roll number.*

**Part A**

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| --- | --- | --- | --- | --- |
| **Answer ALL the Questions. Each question carries 10 marks. 6Q x 10M=60Marks** | | | | |
| **1** | Discuss the key features of Python that make it suitable for machine learning. | **10 Marks** | **L2** | **CO1** |
| **2** | Discuss the major stages of a machine learning project lifecycle. How does feature engineering fit into this workflow? | **10 Marks** | **L4** | **CO1** |
| **3** | Describe the differences between linear and non-linear regression. Provide an example scenario where non-linear regression would be more appropriate. | **10 Marks** | **L3** | **CO2** |
| **4** | How can outliers affect the evaluation of regression models? Discuss methods to handle outliers during model evaluation. | **10 Marks** | **L5** | **CO3** |
| **5** | Compare the strengths and weaknesses of logistic regression, decision trees, random forests, and SVMs in terms of interpretability, scalability, and performance. | **10 Marks** | **L5** | **CO4** |
| **6** | List and describe three methods for validating the quality of clustering results | **10 Marks** | **L2** | **CO5** |

**Part B**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Answer the Questions. Each question carries 20 marks 2Q x 20 = 40 Marks** | | | | | |
| **7.** |  | Define supervised and unsupervised learning. Compare them in terms of objectives, techniques, and real-world applications. | **20 Marks** | **L2** | **CO2** |
|  | | | | | |
| **8.** |  | Compare and contrast data science with traditional data analysis. Discuss how machine learning enhances the capabilities of data science. | **20 Marks** | **L3** | **CO4** |

**\*\*\*\*\* BEST WISHES \*\*\*\*\***