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**PRESIDENCY UNIVERSITY**

**Bengaluru**

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| **Ph.D. Course Work End Term Examinations – JAN-FEB 2025** |
| **Date:** 03 – 02- 2025 **Time:** 09:30 am – 12:30 pm |

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| **School:** SOE | **Program:** Ph.D**.** | |
| **Course Code** :ECE849 | **Course Name :** Predictive Analysis | |
| **Semester**: | **Max Marks**:100 | **Weightage**:50% |

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| **CO - Levels** | **CO1** | **CO2** | **CO3** | **CO4** | **CO5** |
| **Marks** | **20** | **20** | **60** |  |  |

**Instructions:**

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

**Part A**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Answer ALL the Questions. Each question carries 10 marks. 6Q x 10M=60Marks** | | | | |
| **1** | Prediction is an important phenomenon in day to day life. In the same way weather prediction plays an important role in many areas in general and fishery in particular. According to this situation, discuss any two algorithms of prediction taking satellite image as input. | **10Marks** | **L3** | **CO1** |
| **2** | Deep learning in neural network is an important method in analysis of image. In this regard discuss the application of deep neural network in prediction | **10Marks** | **L3** | **CO1** |
| **3** | Big data analysis plays an important role in prediction. In addition to big data quality of the data for a particular situation is also important. Redundant data will make the network to confuse and predict wrong output called overtraining. Quality data is utmost important in any prediction. Describe Data and brief about MDL Principle w.r.t to selection of data applied to image processing | **10Marks** | **L3** | **CO2** |
| **4** | There are many hypothesis in machine learning applicable for image processing. Explain any two types of Hypothesis in Machine Learning suitable for satellite image processing | **10Marks** | **L4** | **CO2** |
| **5** | Selection of number of hidden layers and number of neurons in each layer is very important in any neural network. Discuss the method of selecting the same taking the example of a satellite image. | **10marks** | **L4** | **CO3** |
| **6** | One of the objectives of your thesis is to classify water and non-water bodies. Explain how you are going to achieve this using any classification Algorithm in Machine Learning | **10Marks** | **L4** | **CO3** |

**Part B**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Answer the Questions. Each question carries 20 marks 2Q x 20 = 40 Marks** | | | | | |
| **7.** |  | What is Reinforcement Learning? Explain the same taking an example of predicting the urbanization of this year taking previous year’s urbanization coverage of Bangalore city. | **20 Marks** | **L4** | **CO3** |
|  | | | | | |
| **8.** |  | In neural network activation function between input and hidden layer and between hidden and output layer plays a very important role in the prediction accuracy. Dis cuss about the favorable activation functions as applied to prediction of area of water bodies using satellite images | **20 Marks** | **L4** | **CO3** |

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