



National Forensics Sciences University, Goa Campus Mid- semester Examination

Programme –MTECH AIDS Sem – II

Date - 18/3/2025, 11:00 AM to 12:30 PM

Subject Name: Advanced ML for Cyber Security and Forensics, Subject Code- CTMTAIDS SII P1

Time- 1.5 Hours

Max. Marks- 50

Instructions - 1) Answer all questions. 2) Assume suitable data.

- Q.1 Solve any four 20 marks**
- a. Explain with example about K means algorithm 5 marks
 - b. What is the algorithm related challenges in Machine Learning. 5 marks
 - c. Explain Input Representation in ML and why it is important. 5 marks
 - d. Explain how machine learning can be applied in Cyber Security. Justify your answer with ML pipeline. 5 marks
 - e. What is the significance of CNN. 5 marks
- Q.2 Attempt all 15 marks**
- a. Explain the Reinforcement Learning with key terminologies. 5 marks
 - b. Explain Loss function and Gradient Decent in Back Propagation. 5 marks
 - c. Mention 3 common activation functions used in in ANN. 5 marks
- Q. 3 a. Explain with Diagram LSTM Networks with Gates 8 marks**
- OR**
- b. Explain with Diagram RNN Network 8 marks
- Q.4 a. Introduce Neural Network, Explain Basic Terminologies. 7 marks**
- OR**
- b. Explain Vanishing gradient problem and its resolution. 7 marks

*** All the best***