

Roll No.

Total No. of Pages : 02

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B.Tech. (AI&ML / CSE)(Sem.-7)

NETWORK SECURITY APPLICATIONS USING AI

Subject Code : BTAIML705-20

M.Code : 93994

Date of Examination : 06-12-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

SECTION-A

1. Write briefly :

- What is the problem of underfitting or overfitting of ML model w.r.t. dataset?
- Explain the term data preprocessing.
- Define Recall as a parameter to measure performance of AI model.
- What factors decide the splitting of dataset into training and testing set?
- What are the types of analysis adopted by IDPS?
- List four common methods of credit card frauds.
- Explain the suitability of using Random Forest classification in network security.
- How is mean absolute error determined in a dataset?
- What is the disadvantage with decision tree-based classification algorithm?
- Justify the use of machine learning in similarity matching based problems.

SECTION - B

2. Explain the framework of Machine learning with details in each step for prediction models.
3. Explain some of the red flags to identify a credit card fraud. List the preventive measures.
4. Using an example explain how SVM is used in classification?
5. List at least six common characteristics of a Spam E-mail.
6. Explain the various types of network intrusions.

SECTION - C

7. Explain any content analysisbased technique for E-mail spam detection along with algorithm.
8. Give anyone model of Deep learning-based algorithm for Intrusion detection.
9. Explain ML performance metrics: Accuracy, Precission, F1-score, false negative and ROC.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.