Reg. No. : | | | | | | | | | | | |

Question Paper Code: UEG76

B.E. DEGREE EXAMINATION, NOV 2025

Professional Elective

21ADVG76 – STATISTICAL MACHINE LEARNING

(Regulations 2021)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART - A (5 x 20 = 100 Marks)

1. (a) Explain in detail about Statistical fundamentals and Terminology for Model building and validation.   CO1-U   (20)

Or

   (b) Explain in detail about Machine Learning model Development and Deployment.   CO1-U   (20)

2. (a) Implement simple linear regression to predict housing prices from square footage and interpret the results.   CO2-App   (20)

Or

   (b) Use logistic regression to classify pass/fail for a given dataset with student study hours and grades.   CO2-App   (20)

3. (a) Explain in detail about K-Means clustering Algorithm with real time applications.   CO1-U   (20)

Or

   (b) Explain in detail about Principal Component Analysis.   CO1-U   (20)

4. (a) Use random forest classifier on a dataset of loan approvals and analyze feature importance.   CO2-App   (20)

Or

   (b) Implement AdaBoost on a weak learner for classifying movie reviews as positive/negative.   CO2-App   (20)

5. (a) Explain in detail about Content Based filtering in Reinforcement learning with suitable examples.   CO1-U   (20)

Or

   (b) Explain in detail about Application of Reinforcement learning integration of machine learning.   CO1-U   (20)