



B.E DEGREE EXAMINATIONS: NOV/DEC 2023

(Regulation 2018)

Seventh Semester

ELECTRICAL AND ELECTRONICS ENGINEERING

U18EEE0019: Machine Learning

COURSE OUTCOMES

CO1: Understand the practical aspects of data science and its evolution, applications.

CO2: Understand the concept of various Machine Learning Algorithms.

CO3: Code basic programs in Python language that pertains to the use of machine learning algorithms.

CO4: Applying machine learning techniques for solving various applications with the standard ML Libraries.

CO5: Able to understand the deep learning techniques and develop a basic DNN using TensorFlow.

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 2 = 20 Marks)

(Answer not more than 40 words)

- | | | |
|---|-----|-------------------|
| 1. List the applications of Machine Learning. | CO1 | [K ₁] |
| 2. Outline the significant role of Bias and Variance in Machine Learning. | CO1 | [K ₂] |
| 3. Why KNN is known as lazy learner algorithm? | CO2 | [K ₂] |
| 4. Relate clustering and unsupervised learning. | CO2 | [K ₂] |
| 5. How to declare python variables and data types? | CO3 | [K ₃] |
| 6. Elucidate python global variable and local variable with an example. | CO3 | [K ₁] |
| 7. How to plot a graph using seaborn? | CO4 | [K ₂] |
| 8. Enlist the features of Scikit-learn. | CO4 | [K ₂] |
| 9. Infer the term forward propagation with suitable diagram. | CO5 | [K ₂] |
| 10. Summarize the advantages of back propagation algorithm. | CO5 | [K ₂] |

Answer any FIVE Questions:-

PART B (5 x 16 = 80 Marks)

(Answer not more than 400 words)

- | | | | |
|---|---|-----|-------------------|
| 11. a) How reinforcement learning is different from supervised learning? What is the cost function? Explain the types of cost function. | 8 | CO1 | [K ₂] |
| b) Explain the process of machine learning using a suitable example. | 8 | CO1 | [K ₂] |

12.	a)	What is Support Vector Machines (SVM)? Explain Linear SVMs and its role in classification.	10	CO2	[K ₂]
	b)	Elucidate Mean Squared Error (MSE) and Mean Absolute Error (MAE).	6	CO2	[K ₂]
13.	a)	How DecisionTree is used in classification? Relate decision tree and random forest algorithm.	10	CO3	[K ₂]
	b)	Compare and contrast list and tuple operation in python.	6	CO3	[K ₂]
14.	a)	What is Pandas in Machine Learning? Explain with an example.	8	CO4	[K ₂]
	b)	How to graphically plot data using matplotlib? Explain any one plot with a python code.	8	CO4	[K ₂]
15.	a)	Describe the key layers of Convolution Neural Network for Classification applications.	8	CO5	[K ₂]
	b)	How do optimizers support the model development process? Describe anyone optimizer.	8	CO5	[K ₂]
16.	a)	Explain the relationship between the terms Artificial Intelligence, Machine Learning, Deep Learning, Data Science.	6	CO1	[K ₂]
	b)	Explain conditional statements and python functions with necessary code snippets.	10	CO3	[K ₂]
