



B.E DEGREE EXAMINATIONS: APRIL /MAY 2024

(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 Tensor flow.

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 2 = 20 Marks)

(Answer not more than 40 words)

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|--|-----|-------------------|
| 1. Compare machine learning and deep learning. | CO1 | [K ₂] |
| 2. Differentiate supervised and unsupervised learning based on model, training data and accuracy of results. | CO1 | [K ₂] |
| 3. Is linear regression suitable for time series analysis? Justify. | CO2 | [K ₅] |
| 4. Identify the situations in which k-Means clustering does not yield satisfactory outcomes. | CO2 | [K ₂] |
| 5. Find the output of the following code block. | CO3 | [K ₃] |
| <pre> i = 0 while i < 3: print i i += 1 else: print 0 </pre> | | |
| 6. Write a Python function to find the maximum of three numbers. | CO3 | [K ₃] |
| 7. Write the code to reverse a NumPy array. | CO4 | [K ₃] |
| 8. Identify the purpose of the xlabel and ylabel functions in Matplotlib? | CO4 | [K ₁] |
| 9. Differentiate between forward and backward propagation. | CO5 | [K ₂] |
| 10. Define dense layer in DNN. | CO5 | [K ₁] |

Answer any FIVE Questions:-
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)

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|-----|----|---|---|-----|-------------------|
| 11. | a) | Summarize any eight applications of artificial intelligence. | 8 | CO1 | [K ₂] |
| | b) | Explain the basic machine learning process. | 8 | CO1 | [K ₂] |
| 12. | a) | Explain the two types of support vector machines with an example. | 8 | CO2 | [K ₂] |
| | b) | Compare supervised and unsupervised machine learning. | 8 | CO2 | [K ₂] |
| 13. | a) | Construct a python program to convert tuple into list by adding the string “kct” after every element in the tuple.
Input : tup = (5, 6, 7), K = "kct" Output : [5, 'kct', 6, 'kct', 7, 'kct'] | 8 | CO3 | [K ₃] |
| | b) | Write a Python function that accepts a string and counts the number of upper and lower case letters. | 8 | CO3 | [K ₃] |
| 14. | a) | Outline the creation of Pandas Series and explain how to access the element of series using label and position. | 8 | CO4 | [K ₂] |
| | b) | Illustrate the steps in building a machine learning model using scikit-learn. | 8 | CO4 | [K ₂] |
| 15. | a) | Explain the three layers of deep learning convolutional neural networks. | 8 | CO5 | [K ₂] |
| | b) | Summarize the building a basic deep neural network using TensorFlow with an example. | 8 | CO5 | [K ₂] |
| 16. | a) | Write a function cubesum() that accepts an integer and returns the sum of the cubes of individual digits of that number. Use this function to make functions PrintArmstrong() and isArmstrong() to print Armstrong numbers and to find whether it is an Armstrong number. | 8 | CO3 | [K ₃] |
| | b) | Write a Python function that prints sum of an array. | 8 | CO3 | [K ₃] |
