

Enrolment No:



**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**  
**End-Sem Examination, Dec. 2020**

**Course: Introduction to Machine Learning**  
**Program: B.Tech. All branches - SoE**  
**Course Code: MRRS 0201**

**Semester: III**  
**Time 03 hrs.**  
**Max. Marks: 100**

**Instructions:**

1. Attempt Section A by typing in your answers in the relevant text box.
2. Attempt section B and Section C on A4 size blank sheets. Use graph paper wherever necessary.
3. Answer should be neat and clean. Draw a free hand sketch for circuits/tables/schematics wherever required.

**SECTION A [Type the answer] 30 Marks**

S. No.		Marks	CO
Q 1	What are lists and tuples? What is the key difference between the two?	5	CO1
Q 2	Why is Python a preferred language for deploying machine learning?	5	CO1
Q 3	Write a Python program to print a statement entered by a user in UPPERCASE letters.	5	CO2
Q 4	Write a Python program to find area of a square.	5	CO2
Q 5	Write a python program to convert the user entered data into integer.	5	CO2
Q 6	Why do we split the data into Train/Test for Supervised learning applications?	5	CO1

**SECTION B [Scan and upload] 50 Marks**

Q 7	Explain the significance of indentation in Python. Give an example of indentation using for loop execution.	10	CO1												
Q 8	What is Regression in Machine Learning? What are its applications?	10	CO2												
Q 9	Explain Supervised Learning. What are its limitations? Is regression a supervised learning technique?	10	CO2												
Q 10	What is Non-linear Regression? Can we convert a non-linear regression problem into a linear regression?	10	CO2												
Q 11	Given following data, which regression model will you prefer for prediction of CO <sub>2</sub> emissions. State the reason for choosing the model. <table border="1"><thead><tr><th>Engine size</th><th>CO<sub>2</sub> emissions</th></tr></thead><tbody><tr><td>1.0</td><td>3</td></tr><tr><td>1.5</td><td>4.8</td></tr><tr><td>2.0</td><td>5.7</td></tr><tr><td>2.5</td><td>7.2</td></tr><tr><td>3.0</td><td>9.8</td></tr></tbody></table>	Engine size	CO <sub>2</sub> emissions	1.0	3	1.5	4.8	2.0	5.7	2.5	7.2	3.0	9.8	10	CO3
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**SECTION C [Scan and upload] 20 Marks**

Q 12	Explain the flowchart of a Machine Learning system in detail. <b>OR</b> Write a Python program to check whether a number entered by a user is prime or not, also make sure that user enters a valid integer. If user enters an invalid data prompt user to enter a valid integer. (Hint: use Try Except for checking for valid input data)	20	CO3
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