


Name :																																				
Enrolment No. :																																				
UNIVERSITY OF PETROLEUM AND ENERGY STUDIES End Semester Examination, Dec 2022																																				
Program Name : MCA		Semester : III																																		
Course Name : Machine Learning- Using Data for AI		Time : 3 hours																																		
Course Code : CSAI8002		Max. Marks : 100																																		
No. of Page(s) : 1																																				
Instructions : Attempt all sections.																																				
SECTION-A																																				
S. No.	Questions	Marks	CO																																	
Q.1	Explain with an example how machine learning can ‘unintentionally’ be abused.	4	CO1																																	
Q.2	Elaborate ‘Stemming’ and ‘Lemmatization’ with examples and state the difference between these two.	4	CO2																																	
Q.3	State the difference between covariance and correlation.	4	CO3																																	
Q.4	Compare and contrast ‘Ridge Regression’ and ‘Lasso Regression’.	4	CO3																																	
Q.5	Write a short note on k -nearest neighbours algorithm.	4	CO4																																	
SECTION-B																																				
Q.1	Write a note on following learning algorithms- (i) Supervised Learning, (ii) Semi-supervised Learning, (iii) Active Learning, (iv) Unsupervised Learning, and (v) Reinforcement Learning.	10	CO1																																	
Q.2	Explain with examples how size, shape and color play an important role in visualization.	10	CO2																																	
Q.3	Find whether Y is dependent on X_1 , X_2 or both. <table border="1" style="margin-left: 40px; margin-top: 10px;"> <tr> <td>X_1</td> <td>10</td> <td>12</td> <td>34</td> <td>40</td> <td>15</td> <td>6</td> <td>27</td> <td>18</td> <td>29</td> <td>24</td> </tr> <tr> <td>X_2</td> <td>118</td> <td>114</td> <td>50</td> <td>10</td> <td>106</td> <td>125</td> <td>78</td> <td>99</td> <td>94</td> <td>94</td> </tr> <tr> <td>Y</td> <td>12</td> <td>14</td> <td>45</td> <td>66</td> <td>18</td> <td>9</td> <td>31</td> <td>22</td> <td>24</td> <td>25</td> </tr> </table>	X_1	10	12	34	40	15	6	27	18	29	24	X_2	118	114	50	10	106	125	78	99	94	94	Y	12	14	45	66	18	9	31	22	24	25	10	CO3
X_1	10	12	34	40	15	6	27	18	29	24																										
X_2	118	114	50	10	106	125	78	99	94	94																										
Y	12	14	45	66	18	9	31	22	24	25																										
Q.4	Explain the workings of linear and non-linear SVM. OR Write a note on LDA and state a case where it is preferred over SVM or Logistic Regression.	10	CO4																																	
SECTION-C																																				
Q.1	Elaborate and compare the following regression techniques- (i) Simple Linear Regression, (ii) Multiple Linear Regression, and (iii) Polynomial Regression.	20	CO3																																	
Q.2	Write a note on Ensemble methods and compare them. OR Write a short note on clustering as an ML task (input, output, motivation, and use in real-life). Explain k -means clustering.	20	CO4																																	