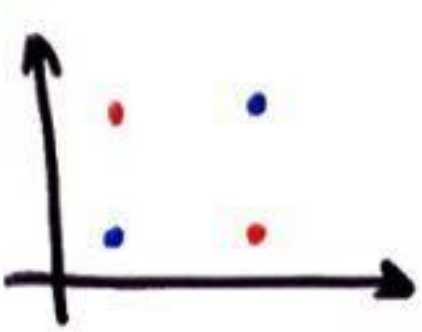
Charotar University of science and Technology
Devang Patel Institute of advance technology & research
Computer Engineering department

Unit test 1 **Semester: 7th**
Subject: Machine Learning (CE473) **Date: 31/08/2020**

Sr No	Question	Marks	CO	PO	PSO
1	Histogram represents the distribution of a continuous variable over a given interval or period of time. **A. True** B. False	1	CO1, CO3	PO1, PO2, PO7	PSO1
2	Which are the issues of Machine Learning 1. Focusing Too Much on Algorithms and Theories 2. Using Changing or Premade Tools 3. Getting Bad Predictions to Come Together with Biases 4. Having Algorithms Become Obsolete as Soon as Data Grows A. 1 and 2 both B. 2 and 3 both C. 1, 2 and 3 **D. All of the mentioned**	1	CO4	PO1, PO2	PSO1
3	Which of the following are applications of Machine Learning? A. Email filtering B. Product Recommendation C. Fraud Detection **D. All of the above**	1	CO5	PO1, PO3, PO4, PO5, PO11	PSO1
4	Machine Learning is the field of study that gives computers the capability to learn without being explicitly programmed. **A. True** B. False	1	CO1, CO3, CO6	PO1, PO7	PSO1
5	Which of the following statement is not correct? 1. Linear regression is used to predict the continuous dependent variable using a given set of independent variables. 2. Linear regression is used for solving Classification problems.	1	CO1, CO3, CO4, CO6	PO1, PO7, PO2	PSO1

	3. In Linear regression, we predict the value of continuous variables. 4. In Linear regression, it is not required to have the linear relationship between the dependent and independent variable. A. Statement 1 & Statement 2 B. Statement 2 & Statement 3 C. Statement 1 & Statement 4 **D. Statement 2 & Statement 4**				
6	Is the data linearly separable?  A. Yes **B. No**	1	CO1, CO5	PO1, PO3, PO4, PO5, PO11	PSO1
7	Which of the following is FALSE for unsupervised learning? 1. In unsupervised learning model, only input data will be given **2. Highly accurate and trustworthy method.** 3. Unsupervised learning is computationally complex compared to supervised learning 4. All of the above	1	CO1, CO4	PO1, PO2	PSO1
8	Which method we can apply on the given data? **Studied** | **Slept** | **Passed** 4.85 | 9.63 | 1	1	CO1, CO3	PO1, PO7	PSO1

	<table><tr><td>8.62</td><td>3.23</td><td>0</td></tr><tr><td>5.43</td><td>8.23</td><td>1</td></tr><tr><td>9.21</td><td>6.34</td><td>0</td></tr></table> A. Classification B. K Nearest Neighbor **C. Logistic Regression** D. Linear Regression				
9	Which of the following can act as possible termination conditions in K-Means? 1 - For a fixed number of iterations. 2 - Assignment of observations to clusters does not change between iterations. Except for cases with a bad local minimum. 3 - Centroids do not change between successive iterations. 4 - Terminate when RSS falls below a threshold a. 1, 3 and 4 b. 1, 2 and 3 c. 1, 2 and 4 **d. All of the above**	1	CO1, CO3, CO4	PO1, PO7, PO2	PSO1
10	Cluster quality depends on _____ intra-class distance and _____ inter-class distance. A. average, minimum **B. minimum, maximum** C. maximum, minimum D. minimum, average	1	CO1	PO1	PSO1
11	Which of the following is correct about deep learning? A. Deep learning uses algorithms to parse data, learn from that data, and make informed decisions based on what it has learned **B. Deep learning structures algorithms in layers to create an "artificial neural network" that can learn and make intelligent decisions on its own**	1	CO1, CO4	PO1, PO2	PSO1

<table>
<tr><td></td><td>C. Deep learning is a subfield of machine learning. While both fall under the broad category of artificial intelligence, deep learning is what powers the most human-like artificial intelligence
D. All of the above</td><td></td><td></td><td></td><td></td></tr>
<tr><td>12</td><td>Handwritten Character Recognition can be solved with the help of _____.

A. Convolutional Neural Network
B. Recurrent Neural Network
C. Auto encoder
D. Deep Belief Network</td><td>1</td><td>CO1, CO3</td><td>PO1, PO7</td><td>PSO1</td></tr>
<tr><td>13</td><td>What is the Mean, Median, Mode and Range of the following set of numbers respectively: 10, 48, 57, 62, 89, 111, 10, 48, 89, 10

A. 53.4, 52.5, 10, 101
B. 35.97, 100, 10, 101
C. 52.5, 100, mode does not exist, 0
D. 52.5, 53.4, mode does not exist, 101</td><td>2</td><td>CO1, CO2, CO6</td><td>PO1, PO2</td><td>PSO1</td></tr>
<tr><td>14</td><td>Using Linear Regression Y=mX + c, find the equation for the line that fits the following data:

<table><tr><th>X</th><th>Y</th></tr><tr><td>6</td><td>10</td></tr><tr><td>-5</td><td>14</td></tr><tr><td>13</td><td>5</td></tr><tr><td>20</td><td>15</td></tr></table>
A. Y = -0.557X + 1.4
B. Y = -0.1306X + 11
C. Y = 0.1306X + 8.5
D. Y = -0.055X + 11.47</td><td>2</td><td>CO1, CO2, CO6</td><td>PO1, PO2</td><td>PSO1</td></tr>
<tr><td>15</td><td>For above question, can we perform regression using neural network?

A. Yes</td><td>1</td><td>CO1, CO3</td><td>PO1, PO7</td><td>PSO1</td></tr>
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<table>
<tr><td></td><td>B. No</td><td></td><td></td><td></td><td></td></tr>
<tr><td>16</td><td>Using K-Nearest Neighbors, what will be the values marked as "?". k = 3. Raining = 1 indicates that it is raining and 0 indicates that it is not raining.
Use Manhattan distance as a measure.

<table><tr><th>ID</th><th>Temperature</th><th>Wind Speed</th><th>Raining</th></tr><tr><td>1</td><td>5</td><td>0.4</td><td>1</td></tr><tr><td>2</td><td>17</td><td>1.5</td><td>0</td></tr><tr><td>3</td><td>7</td><td>5</td><td>1</td></tr><tr><td>4</td><td>10</td><td>3.5</td><td>1</td></tr><tr><td>5</td><td>22</td><td>2.2</td><td>0</td></tr><tr><td>6</td><td>13</td><td>4.5</td><td>1</td></tr><tr><td>7</td><td>15</td><td>12</td><td>?</td></tr></table>
A. Raining
B. Not Raining</td><td>2</td><td>CO1, CO2, CO6</td><td>PO1, PO2</td><td>PSO1</td></tr>
<tr><td>17</td><td><table><tr><th></th><th>X</th><th>Y</th></tr><tr><td>P1</td><td>2</td><td>5</td></tr><tr><td>P2</td><td>3</td><td>3</td></tr><tr><td>P3</td><td>5</td><td>4</td></tr><tr><td>P4</td><td>5</td><td>7</td></tr><tr><td>P5</td><td>4</td><td>5</td></tr></table>
For k = 2, and Centers initialized as C1 = P1, C2 = P2 what will be the Clusters after the first iteration of k-means clustering algorithm? Use Manhattan distance instead of Euclidean distance.

A. {P1, P4, P5}, {P2, P3}
B. {P1, P5}, {P2, P3, P4}
C. {P1, P4}, {P2, P3, P5}
D. {P1}, {P2, P3, P4, P5}</td><td>2</td><td>CO1, CO2, CO6</td><td>PO1, PO2</td><td>PSO1</td></tr>
</table>

18	What is the covariance for given input data? **X** | **Y** 4 | 4 5 | 6 7 | 3 3 | 9 1 | 7 A. **-3** B. -3.75 C. 3.25 D. 5	2	CO1, CO2, CO6	PO1, PO2	PSO1