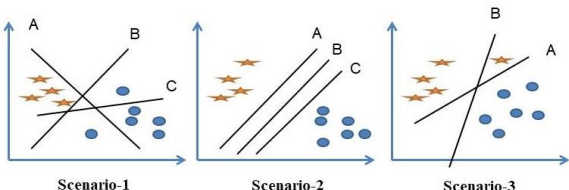
	ABES Engineering College, Ghaziabad							Printed Pages: 2																	
	B.Tech Odd/Even Semester Sessional Test-1							Session: 2022-2023																	
Course Code: KDS 501								Roll No.																	
Course Name: INTRODUCTION TO DATA ANALYTICS AND VISUALIZATION								Date of Exam: 18-10-2022																	
Maximum Marks: 75								Time: 10:00 AM-12:00 PM																	
Instructions: 1. Attempt All sections. 2. If require any missing data, then choose suitably.																									
Q.No.	Question							Marks	CO	KL	PI														
Section-A																									
1	Attempt ALL Parts							(5x2=10)																	
a)	Diffrentiate the Qualitative and Quantitative Data.							2	CO1	K1	1.3.1														
b)	Define the Data? List the characteristics of Data.							2	CO1	K1	1.3.1														
c)	Introduce Backpropagation list their advantages.							2	CO2	K1	2.1.2														
d)	Explain is Principal Component Analysis (PCA)? List their steps.							2	CO2	K2	2.1.3														
e)	Compare Database Management System (DBMS) with Data Stream Management System (DSMS).							2	CO3	K1	2.2.4														
Section-B																									
2	Attempt ANY ONE part from the following							(1x5=5)																	
a)	Diffrentiate the Structured, Unstructured, and Semi-Structured data in brief.							5	CO1	K1	2.2.4														
b)	Introduce Big Data Anlytics. Big Data was defined by the “3Vs” but now there is “5Vs” of Big Data which are also termed as the characteristics of Big Data, explain their requirement in brief.							5	CO1	K1	2.2.3														
3	Attempt ANY ONE part from the following							(1x5=5)																	
a)	Monthly sales revenue data were collected for a company. Calculate the trend of given data using Moving Average method with graphical representation. <table border="1" data-bbox="239 1140 1066 1198"><tr><td>Year</td><td>2011</td><td>2012</td><td>2013</td><td>2014</td><td>2015</td><td>2016</td></tr><tr><td>Sales</td><td>125</td><td>145</td><td>186</td><td>131</td><td>151</td><td>192</td></tr></table>							Year	2011	2012	2013	2014	2015	2016	Sales	125	145	186	131	151	192	5	CO2	K3	1.1.1
Year	2011	2012	2013	2014	2015	2016																			
Sales	125	145	186	131	151	192																			
b)	Explain Linear Regressionin brief with example.							5	CO2	K2	2.2.3														
4	Attempt ANY ONE part from the following							(1x5=5)																	
a)	Presents the need of Stream Computing. Diffrentiate the Batch-Processing Streams and Real-Time streams.							5	CO3	K2	2.1.3														
b)	Elaborate Data Stream Management System in brief with block diagram.							5	CO3	K2	2.1.3														
Section-C																									
5	Attempt ANY ONE part from the following							(1x10=10)																	
a)	Develop and explain the Data Analytics life cycle with appropriate block diagram.							10	CO1	K2	2.2.3														
b)	Explain the technologies address in Big Data. 1. Massive Parallel Processing(MPP) 2. The Cloud 3. Grid Computing 4. Map Reduce PProcessing							10	CO1	K2	1.3.1														
6	Attempt ANY ONE part from the following							(1x10=10)																	
a)	Data empowers to make decision informed, justify the statement and explain the various methods of primary and secodary data collection in detail.							10	CO1	K2	2.2.3														
b)	Cloud computing is a big shift from the traditional way businesses think about IT resources. Explain Public Cloud and Private cloud with their major five characteristics.							10	CO1	K2	2.1.2														
7	Attempt ANY ONE part from the following							(1x10=10)																	
a)	The word fuzzy refers to things which are not clear or are vague, justify the statement in terms of fuzzy logic. Explain three features of fuzzy logic Core, Support, and Boundary with graphical representation.							10	CO2	K2	2.1.2														

b)	<p>Explain Support Vector Machine (SVM) and Kernel function in brief. Choose the best hyper-plane in given Scenario-1,2 and 3 with justification of the statement.</p> <div><p>Scenario-1 Scenario-2 Scenario-3</p></div>	10	CO2	K2	2.1.1												
8	Attempt ANY ONE part from the following	(1x10=10)															
a)	<p>Explain about the Time Series analysis and their comonents. Calculate the least square method for given equation $y=a+bx$ based on the sales values.</p> <table><thead><tr><th>Year</th><th>Sales</th></tr></thead><tbody><tr><td>2015</td><td>30</td></tr><tr><td>2016</td><td>50</td></tr><tr><td>2017</td><td>75</td></tr><tr><td>2018</td><td>80</td></tr><tr><td>2019</td><td>40</td></tr></tbody></table>	Year	Sales	2015	30	2016	50	2017	75	2018	80	2019	40	10	CO2	K3	1.3.1
Year	Sales																
2015	30																
2016	50																
2017	75																
2018	80																
2019	40																
b)	<p>Present the role of Activation function in Artificial Neural Network (ANN) describe in brief. Explain the most propinent activation functions.</p> <ol style="list-style-type: none">1. Linear Function2. ReLu Function3. Sigmoid Function4. Softmax Function	10	CO2	K2	2.2.2												
9	Attempt ANY ONE part from the following	(1x10=10)															
a)	Give the introduction of Stream Computing. Explain the different sources of stream data collection.	10	CO3	K2	2.2.3												
b)	Presents a block diagram of Data Steream Management architecture with detailed component explanation.	10	CO3	K2	2.2.3												
CO	Course Outcomes mapped with respective question																
KL	Bloom's knowledg Level (K1, K2, K3, K4, K5, K6)																
K1- Remember, K2- Understand, K3-Apply, K4- Analyze, K5: Evaluate, K6- Create																	