Course Assessment Test

Course Title	Introduction to Data Science & Big Data Analytics	**Date**	18 June 2024
Name		**Dept**	

1) *This assessment test is to be given out before course commencement. Answers are to be filled in column entitled "Pre-Course Answer"*
2) *At the end of the course, the same assessment sheet is to be given out where answers are to be filled in column entitled "Post-Course Answer". Instructor will then share the answers and participants need to total the score in both "Pre" and "Post" columns through self-marking.*
3) *Assessment sheets will be collected for filling.*

No	Question	Pre-Course Answer	Post-Course Answer
1	Identify which of the following are key subcategories within machine learning? i. Supervised Learning ii. Reinforcement learning iii. Refocused learning iv. Deep learning a) Items i), ii) and iii) b) Items i), ii) and iv) c) Items i), iii) and iv) d) Items ii, iii) and iv)		B
2	What is the main difference between regression and classification in machine learning? a) Regression is used to perform prediction based on historical data, while classification is used to perform prediction based on patterns from current and historical data b) Classification is used to categorize the accuracy of predictions generated from a regression algorithm. c) Regression is used to predict a continuous target variable, while classification is used to predict a categorical target variable d) Regression is used to predict a categorical target variable, while classification is used to predict a continuous target variable		C
3	Which category of deep learning algorithms is widely used in computer vision and image classification applications? a) Convolutional Neural Networks (CNNs) b) Recurrent Neural Networks (RNNs) c) Long Short-term Memory Networks (LSTM) d) Transfer Reinforcement Modeling Networks (TRM)		A

4	Which is the most mature analytical approach in the analytics maturity model? a) Descriptive b) Diagnostic c) Predictive d) Prescriptive		D
5	Business Intelligence (BI) tools typically operate on a) vast amounts of social media data stored in a data lake b) multiple databases in a data warehouse c) small, highly curated datasets stored in a data mart d) single databases within a siloed department within an organization		B
6	The following are key activities performed in the modeling stage of OSEMN with the exception of: a) Split dataset into training and validation dataset b) Use training dataset with different algorithms c) Removing duplicate data and outliers from the dataset d) Create and evaluating different models suited to the dataset		C
7	One of the key applications of data science is churn analysis, which is about: a) predicting which particular batch of items from a production line are more susceptible to failure / defects than others b) analyzing social media interactions to extract overall customer sentiments on a particular product c) determining different customer group segments and utilizing different marketing models to different segments d) identifying customers that are likely to switch to a different company and targeting them with specific marketing offers to attempt to retain them		D
8	One of the key features of Tableau that distinguishes it significantly from other similar data analytics tools applications such as RapidMiner, SAS and Matlab is: a) complex statistical modeling and usage in all stages of a complete data science workflow b) extensive support for automating all stages of data and machine learning pipelines c) ease of integrating deep learning and neural networks within embedded systems d) comprehensive data visualization for data exploration via rich interactive dashboards		D
9	Which of the following Python libraries are specifically used for developing deep learning models? i. Tensorflow ii. Scikit learn iii. Pytorch iv. Matplotlib		B

	a) Libraries i) and ii) b) Libraries i) and iii) c) Libraries ii) and iii) d) Libraries ii) and iv)		
10	What is the key skill requirement for a data scientist role that makes it more complex and demanding than a data analyst / BI analyst role ? a) Assemble business insights from a range of sources such as company data, public data, market, and industry reports b) Performing complex aggregated SQL queries on multiple databases tables in data warehouse using OLAP c) Building machine learning / deep learning models to perform predictive analytics d) Employ automated techniques to extract large amounts of data from various sources and perform cleaning / transformation		C
Total			