


Name:	 UPES <small>UNIVERSITY OF TOMORROW</small>
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, May 2022

Course: MBA OG

Semester: IV

Program: Data Analytics & Applications in Oil and Gas

Time: 03 hrs.

Course Code: OGOG 8003

Max. Marks:100

Instructions:

SECTION A
10Qx2M=20Marks

S. No.		Marks	CO
Q 1	Define the <i>First Principals</i> in mathematics and philosophy	2	CO1
Q 2	What are Data Driven Models?	2	CO1
Q 3	Amongst which of the following is / are the true about regression analysis? A. Describes associations within the data B. Modeling relationships within the data C. Answering yes/no questions about the data D. All of the mentioned above	2	CO1
Q 4	A Linear Regression model's main aim is to find the best-fit linear line and the..... of intercept and coefficients such that the error is minimized. A. Optimal values B. Linear line C. Linear polynomial D. None of the mentioned above	2	CO1
Q 5	The process of quantifying data is referred to as..... A. Decoding B. Structure C. Enumeration D. Coding	2	CO1
Q 6	Define CNN and ANN.....	2	CO1
Q 7	Define SOM & SVM.....	2	CO1

Q 8	What is National Data Lake?	2	CO1
Q 9	Define Computational Intelligence (CI).....	2	CO1
Q 10	What are intelligent oil wells?	2	CO1
SECTION B 4Qx5M= 20 Marks			
Q 1	Define High Performance Computing and its application in Seismic data processing	5	CO2
Q 2	Define the Prescriptive and Descriptive analytic techniques	5	CO2
Q 3	Describe an analyst Perspective on Data Repositories – data warehouse and analytic sandbox	5	CO2
Q 4	Describe fuzzy logic and Genetic algorithm application in oil & gas	5	CO2
SECTION-C 3Qx10M=30 Marks			
Q 1	What are the 6V's characteristics of Big Data? Describe the different data structures in oil & gas industry	10	CO3
Q 2	What are the benefits of Digital Twins in Oil & Gas? Give an example of its application in upstream industry	10	CO3
Q 3	Describe Exploratory Data Analysis tools. Explain Histogram, Box and Whisker plots	10	CO3
SECTION-D 2Qx15M= 30 Marks			
Q 1	Analyze Big Data solutions in oil and gas industry. How apache Hadoop is enabling oil and gas companies to develop “digital oilfields”?	15	CO4
Q 2	Attempt any one of the two. a. Describe data segmentation techniques. Describe the case study on PCA to logging data sets in oil and gas exploration wells from Moldavian Platform, - Southern Carpathians and results by comparison with production tests, core analyses, lithology logs b. Describe the case study of application on Neural Network for 3D fault modeling from seismic data (North Sea data)	15	CO4