


Name:			
Enrolment No:			
UNIVERSITY OF PETROLEUM AND ENERGY STUDIES End Semester Examination, May 2023			
Course: Data Analytics in Upstream Program: M Tech Petroleum Engineering Course Code: PEAU7020		Semester : II Time : 03 hrs. Max. Marks: 100	
Instructions: Attempt all questions. There is internal choice in Q8 and Q11.			
SECTION A (5Qx4M=20Marks)			
S. No.		Marks	CO
Q1	Explain the difference between structured and unstructured data.	4	CO1
Q2	Define standard deviation of data.	4	CO1
Q3	Enumerate four real time data that are generated during drilling of an oil and gas well.	4	CO1
Q4	Enumerate four lag time data that are generated during drilling of an oil and gas well.	4	CO1
Q5	Define outliers of a dataset.	4	CO1
SECTION B (4Qx10M= 40 Marks)			
Q6	Explain business intelligence with suitable examples and figures of 3 types of plots commonly used in BI dashboards.	10	CO2
Q7	Define WITSML, PRODML and RESQML and explain why upstream industry needs these markup languages?	10	CO2
Q8	Define big data platform and explain its need for oil and gas industry? Give examples of 4 big data platforms widely used in industry. OR Explain salient features of RDBMS. Discuss its limitations and explain how a big data platform can help overcome these limitations.	10	CO3
Q9	Explain artificial intelligence and discuss its advantages and limitations in providing real world solutions.	10	CO3
SECTION-C (2Qx20M=40 Marks)			
Q10	Evaluate the role of RTOC and ROC in optimization of drilling and completion operations. Elaborate the IT infrastructure required to run an RTOC for an upstream company.	20	CO4
Q11	Differentiate between descriptive, prescriptive and predictive analytics with suitable example from upstream operation.	20	CO5

OR

Discuss and elaborate the role of mudlogging data in optimization of drilling and completion operations.