

Name:
Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Term Examination, December 2022

Programme Name: B.Tech GIE
Course Name : Oil & Gas Informatics
Course Code : PEAU 4021P
Nos. of page(s) : 2
Instructions: Draw sketches if necessary.

Semester : VII
Time : 3 Hr
Max. Marks : 100

SECTION A (5Qx4=20)

Attempt all questions

S. No.		Marks	CO
Q1	Describe the difference between linear and non linear regression	4	CO1
Q2	Compare between regression and correlation coefficient	4	CO1
Q3	Define the term 'data mining'	4	CO2
Q4	What is the key difference between spline method and kriging method ?	4	CO4
Q5	How Empirical Cumulative Distribution Function is used in Production data?	4	CO4

SECTION B (4Qx10=40)

Attempt all questions

Q6	Discuss regression based machine learning algorithm in analyzing production data	10	CO3																								
Q7	Explain in detail on PCA technique for Oil & Gas data sets	10	CO2																								
Q8	Develop an AHP model for analysis of hydrocarbon prospects using given table <table border="1" data-bbox="198 1348 1286 1558" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Site name</th> <th>porosity</th> <th>permeability</th> <th>TOC</th> <th>lithology</th> <th>structure</th> </tr> </thead> <tbody> <tr> <td>Site A</td> <td align="center">20%</td> <td align="center">Very good</td> <td align="center">15%</td> <td align="center">Sandy clay fm</td> <td align="center">Anticline</td> </tr> <tr> <td>Site B</td> <td align="center">30%</td> <td align="center">Very good</td> <td align="center">10%</td> <td align="center">Sandy fm</td> <td align="center">Dome</td> </tr> <tr> <td>Site C</td> <td align="center">17%</td> <td align="center">Good</td> <td align="center">11%</td> <td align="center">Clay sandy fm</td> <td align="center">Syncline</td> </tr> </tbody> </table>	Site name	porosity	permeability	TOC	lithology	structure	Site A	20%	Very good	15%	Sandy clay fm	Anticline	Site B	30%	Very good	10%	Sandy fm	Dome	Site C	17%	Good	11%	Clay sandy fm	Syncline	10	CO3
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Q9	Apply the outlier analysis technique in geophysical data to locate prospective area for hydrocarbon exploration	10	CO2																								

SECTION C (2Qx20=40)

Attempt all questions

Q10	Evaluate the descriptive and predictive data mining techniques for heterogeneous data sources	20	CO3
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Q11	Develop a suitable model to implement deep learning algorithms in analysis of Oil & Gas datasets OR Critically analyzed the K-mean method of clustering of datasets from given figure	20	CO4
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