

Name:	
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2018

Course: Information Technology for Exploration and Production **Semester: 5th**
Programme: B. Tech. with oil and gas informatics **Time: 03 hrs.**
Max. Marks: 100

Instructions:

SECTION A

S. No.		Marks	
Q 1	Describe the biology of a neuron?	4	CO5
Q2	How is structured data different from unstructured data?	4	CO1, CO2
Q3	Explain the use GIS in petroleum industry?	4	CO3, CO2
Q4	How is centralized storage different from decentralized storage?	4	CO1, CO2
Q5	Explain with the help of a diagram Single Layer Perceptron?	4	CO5

SECTION B


Q 6	What are the core components of data center infrastructure? Analyze all in brief?	10	CO4
Q7	Evaluate the key requirements in the storage systems? Discuss all in detail.	10	CO1,C O2
Q8	Examine the working of naïve Bayesian method and its uses. Give the code in case of a classification problem?	10	CO3, CO4, CO5
Q9	<p>Critically analyze the working of KNN.</p> <p style="text-align: center;">OR</p> <p>Critically analyze the working of K-means</p>	10	CO1, CO4, CO5

SECTION-C

Q 10	<p>Evaluate the working behavior of BPFNN (MLP) and Consider a dataset with the following attributes:</p> <p>Data Set Characteristics:</p> <p>Number of Instances:</p>	20	CO1, CO4, CO5
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	<p style="text-align: center;">442</p> <p>Number of Attributes:</p> <p style="text-align: center;">First 10 columns are numeric predictive values</p> <p>Target : Column 11 is a quantitative measure of disease progression one year after baseline. (Not specified in the attribute information heading. As its not a part of predictive values)</p> <p>Attribute Information:</p> <p style="margin-left: 40px;">Age Sex Body mass index Average blood pressure S1 S2 S3 S4 S5 S6</p> <p>S1 – S6 are different body parameters.</p> <p>Write a code to train model using BPFFN utilizing all the above parameters. Model should be also to foretell disease based upon the inputs.</p>		
Q11	<p>Analyze the working of backpropagation in neural networks?</p> <p style="text-align: center;">OR</p> <p>Analyze the working decision trees? Write the code for the implementation over a flower data set (named as iris_data) with following attributes:</p> <p>150 records with five attributes –</p> <ol style="list-style-type: none"> 1. petal length, 2. petal width, 3. sepal length, 4. sepal width 5. species. 	20	CO5, CO4

	The model must be in position to predict the species based on the parameters of the flower		
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SECTION A

S. No.		Marks	
Q 1	What is journaling and logging in file handling?	4	CO1, CO2
Q2	Define supervised and unsupervised learning? Give scenario's where both the utilized?	4	CO5, CO1
Q3	Explain the use GIS in petroleum industry?	4	CO3
Q4	How is structured data different from unstructured data?	4	CO2, CO2
Q5	Explain the use of Linear regression in classification and regression?	4	CO5

SECTION B

Q6	Critically analyze the working real time embedded systems? Give a real life scenario of its use?	10	CO2, CO3
Q7	Analyze the working of clustering with the help of an example?	10	CO5, CO4
Q8	Examine the working of support vector machine's and its uses. Give the code in case of a classification problem?	10	CO2
Q9	Critically analyze the working of KNN. OR Critically analyze the working of K-means	10	CO5

SECTION-C

Q10	Critically compare Navie Bayes with decision trees? Write the code for their implementation over a flower data set (named as iris_data) with following attributes: 150 records with five attributes –	20	CO1, CO5
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	<p>6. petal length, 7. petal width, 8. sepal length, 9. sepal width 10. species.</p> <p>The model must be in position to predict the species based on the parameters of the flower.</p>		
Q11	<p>Discuss the working of Kohonen Self organizing maps? OR Discuss the importance of the following terms (also, illustrate with diagrams) : (5 marks each)</p> <ol style="list-style-type: none"> 1. Hyperplane 2. Overfitting 3. Single Layer Perceptron 4. Kernel Function 	20	CO4, CO5