

Name:	 UPES UNIVERSITY WITH A PURPOSE
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, May 2019

Course: Information Technology for Petro Refining and Petro Chemicals

Semester: VI

Program: B.Tech(CSE-OGI)

Time 03 hrs.

Course Code: CSIT-333

Max. Marks: 100

Instructions:

SECTION A


S. No.		Marks	CO
Q 1	Discuss the role of membership function in fuzzy set .	4	CO1,C O2
Q 2	What is the important significance of synaptic weight in ANN? Consider a case of oil exploration process and justify your answer.	4	CO2
Q 3	Why deep architecture is preferred now a days over shallow?	4	CO3
Q 4	Discuss spatial regression in brief.	4	CO4
Q 5	List some of the benefits of digitization in the context of oil and gas field.	4	CO4,C O5

SECTION B

Q 6	Explain why it is a good heuristic to choose the variable that is most constrained but the value that is least constraining in Constraint Satisfaction Problem(CSP) search.	10	CO1,C O2
Q 7	Explain in detail Enhance Oil Recovery mechanism.	10	CO5
Q 8	Highlight some of the new trends in refining process.	10	CO4,C O3
Q 9	Elucidate LSTM model and try to relate this model for applying in oil and gas field.	10	CO2
OR			
Q 9	Draw and explain RNN architecture with suitable example.	10	CO2

SECTION-C

Q 10	Compare A* and AO* algorithm in detail with their suitable search graph representation.	20	CO1
Q 11	What is cloud computing? What are the different types of cloud? How the problems of oil and gas sector are addressed by cloud?	20	CO5
OR			
Q 11	What are the benefits of cloud computing in oil and gas field? Also elaborate its challenges.	20	CO5

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SECTION A

S. No.		Marks	CO
Q 1	Compare hard and soft computing.	4	CO1,C O2
Q 2	Brief how soft computing technique helps in oil and gas sector?	4	CO1,C O2
Q 3	Explain the role of IT in oil and gas industry.	4	CO4
Q 4	What is agent based modelling in the context of geospatial terminology?	4	CO4,C O5
Q 5	Discuss some of the advantages of using LSTM model.	4	CO3

SECTION B

Q 6	Assume any five important features that may produce maximum oil flow in reservoir design and explain a suitable feed forward neural network architecture.	10	CO4,C O2
Q 7	Discuss any four different types of Non linear activation function including deep architecture and try to relate this with oil exploration process in the Oil and Gas sector in the context of how non linearity helps deciding oil exploration process in oil and gas sector.	10	CO2,C O3
Q 8	Compare different types of uninformed search with their time and space complexities.	10	CO1
Q 9	Discuss water flooding method in detail.	10	CO4
OR			
Q 9	Discuss thermal EOR with its block diagram	10	CO4

SECTION-C

Q 10	What are the four important objectives of manufacturing execution system?	20	CO5
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	Highlight all of them in detail with suitable example.		
Q 11	Discuss various components of GIS in detail	20	CO1,C O4
	OR		
Q 11	Design a fuzzy rule based expert system that will be utilized for various decision making in oil exploration process in the oil and gas sector. Assume suitable data where ever necessary to design such a system.	20	CO1,C O4