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UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2021

Course: Application of Machine Learning in Industries   **Semester** : 7th
Program: B.Tech CSE (BAO)   **Time** : 03 hrs.
Course Code: CSBA4016 P   **Max. Marks :** 100

Instructions:
- **Section A (Short answer type). Answer all questions. Each question carries 4 marks.**
- **Section B (Medium answer type). Answer all questions. Each question carries 10 marks.**
- **Section C (Long answer type). Answer all questions. Each question carries 20 marks.**

	SECTION A (Scan and Upload)	Marks	COs
Q 1	Compare the rule-based and machine-learning based approaches in fraud detection in banking industry by taking at least 4 parameters.	4	CO1
Q 2	What is a recommendation system? Discuss in very short (may be in couple of sentences) about three different approaches to build recommendation engines.	1+3	CO1
Q 3	Enlist FOUR advantages of using machine-learning techniques in education industry. Give elaboration on each point.	4	CO2
Q 4	What are the various parameters to be considered during Insurance underwriting process? How machine-learning algorithms can be helpful in Insurance underwriting process? Discuss.	2+2	CO3
Q 5	Retail industry is going under tremendous competition and changes. What do you think about the role of intelligent technologies can play in this?	4	CO4
	SECTION B (Scan and Upload)		
Q 1	Develop a case study in which it is clearly depicted that ML techniques can be used in one of the area of handling government administration. While highlighting this case study, clearly mention what category of ML technique is most appropriate for the problem under consideration.	8+2	CO3
Q 2	Discuss the use of various classes of machine-learning techniques used in development of portfolio management system. Please keep in mind to mention the merits and demerits of these algorithms while discussing. Also make short remark on algorithmic trading.	3+5+2	CO1

Q 3	Write a crisp note on use of machine-learning techniques in the field of drug discovery. Please mention all steps in the process of drug discovery and application of ML techniques there-in.	**10**	**CO4**
Q 4	Discuss the applications of machine-learning techniques in the area of energy generation. OR Discuss the applications of machine-learning techniques in the area of Supply Chain	**10**	**CO4**

	SECTION-C **(Scan and Upload)**		
Q 1.	Sentiment Analysis is one of the area which is realized using machine-learning techniques and proving to be game-changer in many domains. Which different steps do you visualize during the entire sentiment analysis process? Discuss the use of various intelligent techniques pertinent to each step at appropriate places. Also, enlist the domains of applications of sentiment analysis.	**5+10+5**	**CO2/ CO3/ CO4**
Q2.	Prediction plays a vital role in giving boost to the advance planning of so many things related to the domain in which the predictive analytics is being done. Discuss various machine-learning techniques useful in predictive analytics. Also mention the domains where the predictive analytics plays important role. OR Enlist various deep learning models. Compare the architectures of these models in detail.	**15+5** **5+15**	**CO1/ CO2/ CO3/ CO4**