Name: **Enrolment No:**	UPES UNIVERSITY WITH A PURPOSE

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

Course: Application of Machine Learning in Industries **Semester: 5th**
Program: B.Tech CSE (AI-ML) **Time 03 hrs.**
Course Code: CSAI3006 **Max. Marks: 100**

Instructions:

- **Section A (Short answer type up to 50-60 words).Answer all questions. Each question carries 4 marks.**
- **Section B (Medium answer type up to 150-200 words). Each question carries 10 marks.**
- **Section C (Long answer type up to 350 words). Each question carries 20 marks.**

	SECTION A	**CO**
Q 1	Name any five supervised machine learning algorithms that can be used in Investment portfolio management systems and brief them with suitable industrial applications.	**CO2**
Q 2	Compare rule based and machine learning based approach in AI.	**CO1**
Q 3	Mention in "Fraud prevention and detection systems" what are the ML algorithms can be used and explain anyone of them.	**CO1**
Q 4	Explain the most important applications of machine learning in healthcare.	**CO3**
Q 5	How Natural Language Processing (NLP) can be helpful in banking sector? Write in brief with suitable use case.	**CO4**

SECTION B

1. Each question will carry 10 marks
2. Instruction: Medium answer type. (150-200 words)

Q 6	a) Critically comment how RNN and LSTM based models can be used in various industrial applications. Explain with suitable use cases. (5 Marks) b) Logically design a use case where the drawbacks associated with RNN can be solved with other suitable model. (5 Marks) **P.T.O**	**CO3**

Q 7	a) How machine-learning models can be helpful in transportation sector. (5 Marks) b) Discuss in brief with suitable example along-with write few issues in it (transportation sector). (5 Marks)	**CO1**
Q 8	"Machine Learning based techniques can be used to analyze and evaluate the credit risk data sets". - Justify with suitable example. (10 Marks)	**CO2**
Q 9	"Semantic network is also called as propositional network". Justify your answer with any two propositions of your choice and create appropriate semantic networks of your selected propositions. List advantages and disadvantages of semantic network with suitable examples. (10 Marks) **OR** Mention the Comparisons in between architecture of different types of deep learning models. (You may compare in between 4 models) (2.5*4= 10 Marks)	**CO4**

SECTION-C

1. Each question will carry 20 marks.
2. Instruction: Long answer type. (Up to 350 words).
3. In Section C, option "a" is mandatory and there is an internal choice between option "b" and option "c".

Q 10.	(a) The filtering technique is based on the resemblances of the users and it is built on collecting and analyzing information of user's activities such as their behavior and choices". • Justify your answer with different types of collaborative filtering. (10 Marks) • Design a typical recommendation system/engine and explain its working principles. (10 Marks) (b) Design a neural based machine translation system and explain its process of working in detail. Also discuss how MT evaluation can be done with BLEU score taking suitable machine generated output and reference translations. (10+10= 20 Marks) **OR** (c) Think and design a suitable case study on application of ML in predicting Students Performance where methodology should be proposed based on a problem and the datasets should be clearly described and different visualization techniques may be showcased along-with results. And also explain the different types of analytics in related to Machine Learning. (15+5= 20 Marks)	**CO4**