

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA
(An Autonomous Institute)

Affiliated to Dr. A.P. J. Abdul Kalam Technical University, Uttar Pradesh, Lucknow

Course...B.Tech.

Branch: IOT/AI/CS

Semester: VI

Sessional Examination: Ist

Subject Name: Machine Learning

Year- (2022-2023)

Time: 1.15Hours

Max. Marks:30

General Instructions:

- This Question paper consists ofpages &questions. It comprises three Sections -A, B, & C. You are expected to answer them as directed.
- Section A-Q.No- 1 is of one 1 mark each & Q.No- 2 carries 2 mark each.
- Section B-Q. No- 3 carries 5 marks each.
- Section C-Q.No-4 & 5 carries 6 marks each. Attempt any one part a or b

		<u>SECTION – A</u>	[08Marks]	
1.	All questions are compulsory-		(4×1=4)	
	a.	Which of the following are ML methods? A. based on human supervision B. supervised Learning C. semi-reinforcement Learning D. All of the above	(1)	CO1
	b.	Which is the machine learning algorithms that can be used with labeled data. A. Regression Algorithm B. Clustering Algorithm C. Association Algorithm D. All the above	(1)	CO1
	c.	Predicting whether a tumour is malignant or benign is an example of? A. Unsupervised Learning B. Supervised Regression Problem C. Supervised Classification Problem D. Categorical Attribute	(1)	CO1
	d.	What is true about Machine Learning? A. Machine Learning (ML) is a field of computer science B. ML is a type of artificial intelligence that extract patterns out of raw data by using an algorithm or method. C. The main focus of ML is to allow computer systems learn from	(1)	CO1

		experience without being explicitly programmed or human intervention. D. All of the above																																																		
2.	All questions are compulsory-		(2×2=4)																																																	
	a.	Explain Bias Variance tradeoff.	(2)	CO1																																																
	b.	Discuss with examples some useful applications of machine learning.	(2)	CO1																																																
SECTION – B			[10Marks]																																																	
3.	Answer any <u>two</u> of the following-		(2×5=10)																																																	
	a.	Difference between Over fitting and Under fitting? Draw the diagram of it with example	(5)	CO1																																																
	b.	Describe well–posed learning problem? Explain the important features that are required to well–define a learning problem.	(5)	CO1																																																
	c.	Define about Classification and Regression methods with example.	(5)	CO2																																																
SECTION – C			[12Marks]																																																	
4	Answer any <u>one</u> of the following-		(1×6=6)																																																	
	a.	Explain about Find-S algorithm? Consider the following data set having the data about which particular seeds are poisonous. <table><tr><th>EXAMPLE</th><th>COLOR</th><th>TOUGHNESS</th><th>FUNGUS</th><th>APPEARANCE</th><th>POISONOUS</th></tr><tr><td>1.</td><td>GREEN</td><td>HARD</td><td>NO</td><td>WRINKLED</td><td>YES</td></tr><tr><td>2.</td><td>GREEN</td><td>HARD</td><td>YES</td><td>SMOOTH</td><td>NO</td></tr><tr><td>3.</td><td>BROWN</td><td>SOFT</td><td>NO</td><td>WRINKLED</td><td>NO</td></tr><tr><td>4.</td><td>ORANGE</td><td>HARD</td><td>NO</td><td>WRINKLED</td><td>YES</td></tr><tr><td>5.</td><td>GREEN</td><td>SOFT</td><td>YES</td><td>SMOOTH</td><td>YES</td></tr><tr><td>6.</td><td>GREEN</td><td>HARD</td><td>YES</td><td>WRINKLED</td><td>YES</td></tr><tr><td>7.</td><td>ORANGE</td><td>HARD</td><td>NO</td><td>WRINKLED</td><td>YES</td></tr></table>	EXAMPLE	COLOR	TOUGHNESS	FUNGUS	APPEARANCE	POISONOUS	1.	GREEN	HARD	NO	WRINKLED	YES	2.	GREEN	HARD	YES	SMOOTH	NO	3.	BROWN	SOFT	NO	WRINKLED	NO	4.	ORANGE	HARD	NO	WRINKLED	YES	5.	GREEN	SOFT	YES	SMOOTH	YES	6.	GREEN	HARD	YES	WRINKLED	YES	7.	ORANGE	HARD	NO	WRINKLED	YES	(6)	CO1
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	b.	Differentiate between Supervised, Unsupervised and Reinforcement Learning.	(6)	CO1																																																
5.	Answer any <u>one</u> of the following-		(1×6=6)																																																	
	a.	Explain the linear regression and logistic regression with example.	(6)	CO2																																																
	b.	Explain Candidate Elimination Algorithm with Example.	(6)	CO1																																																