

Department of Information Technology

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Sub. Code & Title (R20CSE3201) Machine Learning

Faculty ,Name & Designation G.SIRISHASSISTANT PROFESSSOR

Year/Sem./Section

III/I



QUESTION BANK WITH BLOOMS TAXONOMY LEVEL (BTL)

(1. Remembering 2. Understanding 3. Applying 4. Analyzing 5. Evaluating 5. Creating)

			1 MARKS	QUESTION	S				BT Level	Course Outcome
1.	Define Machine Learning.?							I	CO1	
2.	Discuss ap								VI	CO1
3.	What is wel								l	CO1
4	Explain the	steps in	designing	a learning sy	stems ii	n detail.?			II	CO1
5.				nd issues in	machine	e learning	j.?		II	C01
6.	Define cond	•	•						I	C01
7.				Ordering of	Hypothe	eses?``			II	C01
8	Define Cons			?					[C01
9	DefineVers									C01
10	Write LIST-	THEN-EL	<u> IMINATE a</u>						II	C01
	D 6: 14			10 MARK	•				<u> </u>	
1.	Define Machine Learning. Explain with examples why machine learning isimportant							l	CO1	
3.	a.A Checke b.A Handwi c.A Robot d	Experience: a.A Checkers learning problem b.A Handwritten recognition learning problem c.A Robot driving learning problem Write FIND-S algorithm and explain with example given below						//	CO1	
	Example		AirTemp	Humidity		Water	Forecas t	Enj		
	1	Sunny	Warm	Normal	Stron	Warm	Same	Yes		
	2	Sunny	Warm	High	Stron	Warm	Same	Yes		
	3	Rainy	Cold	High	Stron	Warm	Change	No		
	4	Sunny	Warm	High	Stron g	Cool	Change	Yes		
4.	Write the fir			or the below porithm.	mention with	ed trainir	ng example	s	II	C01

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Year/Sem./Section Academic Year: 2022-23 III/I

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	Faculty ,Nan		lame & Desigi	nation	G.SIRISHA	ASSISTANT PROFES	SSOR	
		T		Ι				
	Origin	Manufacturer	Color	Decade	Туре	Example Type Positive		
	Japan	Honda	Blue	1980	Econom	-		
	Japan	Toyota Toyota	Green Blue	1970 1990	Sports Econom	Negative Positive		
	Japan USA	Chrysler	Red	1990	Econom			
		Honda	White	1980	Econom	-		
	Japan	Toyota	Green	1980	Econom	•		
	Japan					-		
	Japan	Honda	Red	1990	Econom	·		
		Big	Red	Circ		lo		
		Small	Red			lo		
		Small	Red	Circ		'es		
		Big	Blue	Circ		lo		
		Small	Blue	Circ	ie Y	'es		
5.	Evoloin i	n detail the Induc	tivo Pion of	Candidate	Eliminatio	n algorithm	ll II	CO1
6.		onsistent Hypoth				iii aigoriuiiii.	11	C01
7.							<u>!</u>	COT
	Define co	oncept learning a	na aiscuss	with exam	ipie.		Į.	CO1
8	Explain t	the steps in des	igning a lea	arning sys	stems inde	etail.	II	CO1
9	What is	well- posed lear	ningproble	ms.expla	in with exa	ample.	I	CO1
10	Remarks	on version spac	es and cand	lidate elim	ination alg	orithm?	I	CO1
	ļ.	•			TREE LEAF			
			1 N	/ARKS QL	JESTIONS			
1.	What is	decision tree and	decision tre	ee learning	j ?		I	C02
2.		appropriate prol)	I	C02
3.		overfiting of data					VI	CO2
4.		e issues in learni		trees			I	C02
5.		perceptron?					VI	C02
6.	What is Artificial Neural Network?						I	C02
7.				le of data	?		VI	CO2
8	What is linear and non-linear seperable of data? Derive the Gradient Descent Rule						II	CO2
9	Write Gra	adient Descent al	aorithm for	training a	linear unit.		VI	C02
10		e Back Propagat		J			II	C02
		1, 1, 3, 1, 1		MARKS O	UESTIONS			1
1	Explain t	he Back Propaga	tion algorith	nm?			II	CO2
2.	Issues in	Decision Tree L	earning?				II	C02
3.	Write a n			g Rule (ii)	Gradient D	escent and Delta	VI	CO2
	Rule							

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Faculty, Name & Designation **G.SIRISHASSISTANT PROFESSSOR** 4. How a single perceptron can be used to represent the Boolean functions CO2 such as AND, OR 5. Design a two-input perceptron that implements the boolean function A Λ ¬ ۷I CO2 B. Design atwo-layer network of perceptron's that implements A XOR B. 6 Give Decision trees for the following set of training examples VI CO2 Outlook Humidity Wind **PlayTennis** Day Temperature D1 Weak Sunny Hot High No D2 Sunny Hot High Strong No D3 Overcast Hot High Weak Yes D4 Rain Mild High Weak Yes D5 Rain Cool Normal Weak Yes Rain Cool D6 Normal Strong No D7 Overcast Cool Normal Strong Yes Mild High אמ Weak Sunny No D9 Sunny Cool Weak Normal Yes Mild Weak D10 Rain Normal Yes D11 Sunny Mild Normal Strong Yes D12 Overcast Mild High Strong Yes D13 Overcast Hot Normal Weak Yes D14 Rain Mild Hiah No Strona 7 Consider the following set of training examples. III C02 What is the entropy of this collection of training example with respect to the target function classification? What is the information gain of a2 relative to these training examples? Classification Instance **a**₁ a_2 T Т 2 + Т Т 3 Т F 4 F F + 5 F Т 6 8 Explain backpropagation algorithm with an example? V١ CO2 What are Restriction Biases and Preference Biases and differentiate 9 C₀₂ between them. Π 10 Discuss Inductive Bias in Decision Tree Learning. CO2

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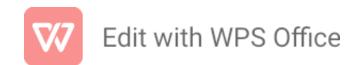
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Faculty ,Name & Designation G.SIRISHASSISTANT PROFESSSOR



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ISPAHINDATIVAN

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10		II	CO2
6.			
7.			
8			
9			
10			
10			
	Unit - III : BAYESIAN LEARNING		
	1 MARKS QUESTIONS		
	· · · · · · · · · · · · · · · · · · ·		
1.	Define Bayesian theorem?	<u> </u>	CO3
2.	Explain the practical difficulties of Bayesian theorem.	II .	CO3
3	What are Consistent Learners?	l I	CO3
4.	Explain Brute force Bayes Concept Learning	II	CO3
5	Describe the concept of MDL.	II	CO3
6.	Explain the concept of EM Algorithm	II	CO4
7	Explain Binomial Distribution with an example.	II.	CO4
8.	What are instance based learning?	l	CO4
9.	Define the following terms with respect to K - Nearest Neighbour Learning	I	CO4
10.	Explain radial basis function	II	CO4
	10 MARK QUESTION		
1.	Write about bayes optimal classifier	I	CO3
2	Define Bayesian theorem? What is the relevance and features of Bayesian theorem? Explain the practical difficulties of Bayesian theorem.	I	CO3
3.	Define is Maximum a Posteriori (MAP) Maximum Likelihood (ML)	П	CO3
	Hypothesis. Derive the relation for hmap and hml using Bayesian		
	theorem.		
4	What is gibbs Algorithm ? Naïve bayes classifier?	I	CO3
-	Triat is gibbs / ligorithin . Italive bayes classifier:	'	000
5.	5/7 .F. IN M.DO 000	I	C03
]	What is weighted majo <mark>rity algo</mark> rit hm? t with WPS Office	•	
6	Evaloin the concept of EM Algorithm Discuss what are	II	CO4
	Explain the concept of EM Algorithm. Discuss what are		



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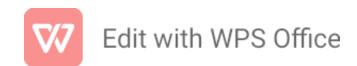
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	Gaussian Mixtures		
7.	Describe the concept of MDL. Obtain the equation for hMDL	II	CO4
8.	K-Nearest Neighbouring algorithm?	VI	CO4
9	What is genetic algorithm? How to parallelizing genetic algorithms.	II	CO4
10	Write about case based reasoning?	II	CO4



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	Unit-IV: Learning Sets of Rules		
	1 MARKS QUESTIONS		
1.	What are the Learning Sets of Rules?	III	CO5
2.	Explain about Sequential covering algorithm?	II	CO5
3.	Describe Learn-One-Rule?	I	CO5
4.	Write Learning First-Order Rules?	III	CO5
5.	What are the Specializing Rules in FOIL?	III	CO5
6.	Defined inverted Induction?	I	CO5
7.	Defined inverted Ddeduction?		CO5
8	Explain Learning First-Order Rules?	II	CO5
9	Defined PROGOL	I	CO5
10	Defined CIGOL?	I	CO5
	10 MARK QUESTIONS		
1.	Discus about PROGOL ?	I	CO5
2.	Describe in details of Inverting Resolution?	I	CO5
3.	Explain details of Learning Sets of Rules?	II	CO5
4.	Write the Sequential Covering Algorithm? With examample.	III	CO5
5.	Describe First Order Rule for Classifying Web Pages.	I	CO5
6.	Discus about PROGOL ?	I	CO5
7.	Defend Induction as Inverted Deduction .	V	CO5
8	What are the Deduction Resolution Rule.	III	CO5
9	Classify the First order resolution.	II	CO5
10	Write the Sequential Covering Algorithm .Demonstrate the whether forcasting example.?	III	CO5
	Day Outlook Temperature Humidity Wind PlayTennis		
	D1 Sunny Hot High Weak No		
	D2 Sunny Hot High IT WITH Strong NOTFICE		
	D3 Overcast Hot High Weak Yes		



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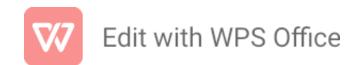
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Academic Year: 2022-23 Year/Sem./Section III/I

Faculty Name & Designation G SIRISHA ASSISTANT PROFESSSOR

D4	Rain	Mild	High	Weak	Yes
D5	Rain	Cool	Normal	Weak	Yes
D6	Rain	Cool	Normal	Strong	No
D7	Overcast	Cool	Normal	Strong	Yes
D8	Sunny	Mild	High	Weak	No
D9	Sunny	Cool	Normal	Weak	Yes
D10	Rain	Mild	Normal	Weak	Yes
D11	Sunny	Mild	Normal	Strong	Yes
D12	Overcast	Mild	High	Strong	Yes
D13	Overcast	Hot	Normal	Weak	Yes
D14	Rain	Mild	High	Strong	No

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	V-Combining Inductive and Analytical Learning		
	1 MARKS QUESTIONS		
1.	Defind Combining Inductive and Analytical Learning?	I	CO6
2.	Defferentiate the Inductive and Analytical Learning?	IV	C06
3.	Defind Domain Theory?	I	CO6
4.	Describe KBANN?	II	C06
5.	Defind Hypothesis Space.	I	C06
6.	Describe EBNN.	II	C06
7.	Demonstrate TangetProp.	III	C06
8	Describe FOCL.	I	C06
9	Discus Reinforcement Learning	I	C06
10	Describe the Using Prior Knowledge to Augment Search Operators	I	C06
	10 MARK QUESTIONS	<u> </u>	
1.	Discuss the FOCL Algorithm in detail.	II	CO6
2.	Memorize the Domain Theory.give a traning example.	I	CO6
3.	Discuss Combining Inductive and Analytical Learning in detail. explain motivation.	II	CO6
4	Implement the Neural Net Equivalent to Domain Theory	III	CO6
5.	Explain Motivation Inductive-Analytical Approaches to Learning	II	C06
6.	Discuss the EBNN Algorithm	II	CO6
7.	Discuss the TangentProp Algorithm. n Illustrative Example	II	CO6
8	Explain KBANN Algorithm.Give an Example	II	CO6
9	Discuss about Hypothesis Space Search.Demonstrate the Using Prior Knowledge to Initialise the Hypothesis	II	C06
10	What is nthe Motivation.Explain Motivation Inductive-Analytical Approaches to Learning	III	CO6

