Code No.: 16147 (F) N/O

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD Accredited by NAAC with A++ Grade

B.E. VI-Semester Main & Backlog Examinations, May/June-2023 Introduction to Machine Learning (OE-IV)

(Common to EEE & ECE)

Time: 3 hours

Max. Marks: 60

Note: Answer all questions from Part-A and any FIVE from Part-B

Q. No	Stem of the question				
1.	List sub areas of AI?	N	I	CC) P
2.	What is a classification problem?	2			
3.	Explain the difference between the	2	2	•]
4.	Explain the difference between the CART and ID3 Algorithms.	2			1
	List down the attribute selection measures used by the ID3 algorithm to	2	2	2	1
5.	Define Perceptron.	2	1	2	1
6.	What is the drawback of a single layer perceptron?	2	1	3	1
7.	What is Support Vector Machine?	2	2		1
8.	Define Bayes rule.	2		3	1
9.	List different types of Clustering.	2	1	4	1
10.	Differentiate between		1	4	1
	Differentiate between supervised and unsupervised learning?	2	1	5	1
11. a)	Part-B (5 \times 8 = 40 M	2	3	5	2
	with an example.	4	2		
b)	Illustrate the significance of Number of		2	1	1
	Illustrate the significance of NumPy along with an example program. Explain KNN Algorithm?	4	3	1	2
b)	Suppose you have given the following 2	2	1	2	1
	Suppose you have given the following 2-class data where "+" represent a positive class and "-" is represent negative class. you are now want to use $k-NN(k=3)$, and predict the class for $k=5$ and $k=4$?	6	3	2	2
	10 9 8 7 4 3 2 1 0 1 2 3 4 4 4 4 4 4 4 4 4 4 4 4 4				
a) W	hat is gradient descent and delta rule?				
b) De	scribe multilayer neural network. Explain why back propagation algorithm	2 2	3	1	
is r	equired. Explain why back propagation algorithm	6 2		1	-

					NE DE TA			2	4	2	4	1	
a) Evi	plain Naïve Bayes	Class	ificatio	n.			ing	6	4	4	4	2	
. a) Exp	Jimii I was		t the o	itnut for	the fol	lowing n	new instance using	0		•			
b) For	r the data below, I	predic	t the of	utput to-									
Na	ïve Bayes algorith	m.			* **75	d- Wes	k)						
V.	Weather =Sunn	y; Hu	umidity	=Norm	ai; wii	iu- vi ca	.m)						
A.	(Weather	Day	Weather	Humidity	Wind	Play_ Tennis?							
- 1		Duy	2004			No.							
		1	Sunny	High	Weak	Yes	18						
		2	Cloudy	High Normal	Strong	Yes							
		3	Sunny	High	Strong	Yes							
	-	5	Rainy	High	Strong	No							
1		6	Rainy	Normal	Strong	No Yes	-						
1		7	Rainy	High	Weak	No							
		8	Sunny	High Normal	Weak	Yes							
		9	Cloudy	High	Strong	No							
								2		1	5		1
	Explain DBSCAN	algori	ithm for	r density	-based	clusterin	g.	-		•	5		2
15. a) E	Explain DBSCAN	aigoi	CHILL 10		1.4	t to find	out clusters by taking	g 6	,	3	2		4
E) /	Apply DBSCAN al	lgoritl	nm on t	he below	datase	t to mid	out view						
b) A	eps = 2 and $MinPts$	s=3.											
e	eps - 2 and man												
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		-	Subjec			10							
			P1	2		5							
1			P2	2									
			P3	8		4							
		Ì	P4	5		8							
		1	P5	7	7	5							
		1	-			4							
			D6	1 6)	4				-		1	2
			P6	(, 1	4 uncune	rvised leaning, expl	ain	4	2		1	2
16 3	What is the differ	ence 1		C	icod an	dunsupe	rvised leaning, expl	ain	4	2		1	2
16. a)			petween	n Superv	ised an	d unsuper	rvised leaning, expl arning?	ain					
16. a)			petween	n Superv	ised an	d unsuper		ain	4	2		1 2	2
			petween	n Superv	ised an	d unsuper		ain					
b)	Write down Logi	istic R	petween are thes Regressi	n Supervice with R	ised an einforce	d unsuper ement le	all the steps.	ain	4	2		2	
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b)	Write down Logi	istic R	petween are thes Regressi	n Supervice with R	ised an einforce	d unsuper ement le	all the steps.	ain	4	2		2	
b)	Write down Logi Answer any two Explain the deta	istic R of the	cetween are thes Regression follow Percept	n Supervice with R ion algoring:	ised an einforce eithm ex	d unsuper ement le emplaining	all the steps.		4	2	2	2	2
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b)	Write down Logic Answer any two Explain the deta problem? Describe the signature of the si	istic R of the	Detween these Regression follow Percept	n Supervice with Ricon algoring: aron algorithms algor	ised an einforce ithm ex- rithm a	d unsuperement less rement les rements le	all the steps. nitation of XOR M. List any two keeps.	ernel	4 4	2	2	2	2
b) 17.	Write down Logic Answer any two Explain the deta problem? Describe the sign functions.	istic R of the ils of	between are these Regressive follow Perceptures	a Supervine with R ion algoring: aron algorithms are algorithms.	ised an einforce ithm extriction af the control of	d unsuperement le ement le explaining and its lim	all the steps. nitation of XOR M. List any two kee of two variables A	ernel	4	2	2	3 4	1 2
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ii)	Blooms Taxonomy Level – 2	40%
iii)	Blooms Taxonomy Level – 3 & 4	