Total No. of Questions:[06]   Total No. of Printed Pages:[02]

PRN. No.		PAPER CODE	

MAY 2022 - ENDSEM EXAM
FINAL YEAR B. TECH. (COMPUTER ENGINEERING)
(SEMESTER - II)
COURSE NAME: PROFESSIONAL ELECTIVE-IV
[ADVANCED MACHINE LEARNING]
COURSE CODE: CSUA40181B
(PATTERN 2018)

Time: [1 Hr]   [Max. Marks: 30]

Instructions to candidates:
1) Answer Q.1 OR Q.2, Q.3 OR Q.4, Q.5 OR Q.6.
2) Figures to the right indicate full marks.
3) Use of scientific calculator is allowed.
4) Use suitable data wherever required.

Question No.	Question Description	Marks	CO mapped	Blooms Taxonomy Level
Q.1 a	After training a neural network, you observe a large gap between the training accuracy (100%) and the test accuracy (42%). Choose the method to reduce this gap.	4	4	Level 4: Analyze
Q.1 b	Justify the need of Gradient Descent in neural network with detailed explanation of it working.	6	4	Level 4: Analyze
OR				
Q.2 a	"Mini batch gradient descent is faster than gradient descent." Justify the statement.	4	4	Level 4: Analyze
Q.2 b	When should one use L1, L2 regularization instead of dropout layer, given that both serve same purpose of reducing overfitting? Justify your answer.	6	4	Level 4: Analyze
Q.3 a	Explain following terms	4	5	Level 2:

	i)Deep Dream ii) Deep Art			Understanding
Q.3 b	Compare various architectures of CNN.	6	5	Level 4: Analyze
OR				
Q.4 a	"Convolutional Neural Network (CNN) work better with image data." Give justification.	4	5	Level 4: Analyze
Q.4 b	Given a Convolutional Neural Network having three different convolutional layers in its architecture as – in Layer 1 - 10 filters of 3X3, stride 1 and no padding, in layer 2 -20 filters of 5 X 5 with stride 2 and no padding, in layer 3- 40 filters of 5 X 5 with stride 2 and no padding, If 39 X 39 3-D image pass as input to this network, then estimate the dimension of the vector after passing through a fully connected layer in the architecture.	6	5	Level 5: Evaluate
Q.5 a	Distinguish BPTT and truncated BPTT.	4	6	Level 4: Analyze
Q.5 b	"RNNs work better with text data". Give justification.	6	6	Level 4: Analyze
OR				
Q.6 a	Compare GRU and LSTM architectures.	4	6	Level 4: Analyze
Q.6 b	Which of the following activation functions can lead to vanishing gradients? i)ReLU ii) Tanh iii) Leaky ReLU Justify your answer with explanation of its working	6	6	Level 4: Analyze