Total No. of Question : [4]　　　　　**Registration No. :** | | | | | | | | |

Programme Name : Bachelor of Electronics and Telecommunication Engineering
Regular B.Tech.Final Year (A.Y.2023-24) ESE Sem. VII Nov.2023
VII SEMESTER (2020 BATCH)
201ETL403-Computer Vision and Pattern(TH)

Duration : [02:00 PM - 04:00 PM]
Date : 28 Nov, 2023
Day : Tuesday

　　　　　　　　　　　　Marks : 50

Instructions :

(Q1) All question are compulsory　　　　　　　　　　　　　　　　　　　　　[20.0]

　　(1.1) Explain with the help of block diagram decision theoretic pattern classifier.　　[6.0]

　　　　CO :- CO1
　　　　Blooms Taxonomy :- Understand

　　(1.2) For given data below assign new flower to one of class using K-NN where K=3, new　[7.0]
　　　　flower Sepal length is 5.2 & Sepal Width is 3.1.

Sr. No.	Sepal length	Sepal width	species
1	5.3	3.7	Setosa
2	7.2	3.0	Virginica
3	5.4	3.4	Setosa
4	5.1	3.3	Setosa
5	5.4	3.9	Setosa
6	7.4	2.8	Virginica
7	7.3	2.9	Virginica
8	6.0	2.7	Verscicolor
9	5.8	2.8	Virginica
10	6.3	2.3	Verscicolor
11	5.1	2.5	Verscicolor

　　　　CO :- CO2
　　　　Blooms Taxonomy :- Understand

　　(1.3) Explain architecture of a content based image retrieval system.　　　　　　[7.0]

　　　　CO :- CO3
　　　　Blooms Taxonomy :- Understand

(Q2) All question are compulsory　　　　　　　　　　　　　　　　　　　　　[10.0]

　　(2.1) Apply Perceptron to classify pattern. The training pattern set is given in table. Initial　[7.0]
　　　　weight assumed as w1=0.2 and w2= 0.3 respectively. Assume a learning factor of 0.1
　　　　and a threshold of 0.6. After learning Perceptron Classify the unknown pattern p=(0.4 ,
　　　　0.6)

CO :- CO4
Blooms Taxonomy :- Apply

OR [2.1 / 2.2]

(2.2) Why XOR model cannot be implemented using single Perceptron   [7.0]

CO :- CO4
Blooms Taxonomy :- Apply

(2.3) Describe different activation function used in ANN.   [3.0]

CO :- CO4
Blooms Taxonomy :- Apply

(Q3) All question are compulsory   [10.0]

(3.1) What is co-occurrence method of texture description? Name the criteria derived from   [5.0]
co-occurrence matrices for texture classification.

CO :- CO5
Blooms Taxonomy :- Analyze

OR [3.1 / 3.2]

(3.2) Explain texture properties derived from first & second order statistics of edge   [5.0]
distributions.

CO :- CO5
Blooms Taxonomy :- Analyze

(3.3) Write texture primitive grouping algorithm.   [5.0]

CO :- CO5
Blooms Taxonomy :- Analyze

(Q4) All question are compulsory   [10.0]

(4.1) Explain Differential Motion analysis method.   [5.0]

CO :- CO6
Blooms Taxonomy :- Understand

OR [4.1 / 4.2]

(4.2) Write an algorithm for velocity field computation from two consecutive images.   [5.0]

CO :- CO6
Blooms Taxonomy :- Understand

(4.3) Describe Kalman filters used in motion vision application.   [5.0]

CO :- CO6
Blooms Taxonomy :- Understand

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