MCA – 63A

VI Semester M.C.A. Examination, February/March 2010
PATTERN RECOGNITION

Time: 3 Hours Max. Marks: 100

Instructions: *1) Answer **all** questions in Part – **A**, **5** out of 8 questions in Part – **B**, and **4** out of 6 questions in Part – **C**.*
*2) Part – **A**: Questions from **1 to 8** carry **1** mark and **9 to 14** carry **2** marks **each***
*3) Part – **B**: **Each** question carries **8** marks.*
*4) Part – **C**: **Each** question carries **10** marks.*

PART – A

1. What is Overfitting ?
2. Define Prior Knowledge.
3. State any one Bayes decision rule ?
4. What do you mean by maximum likelihood Estimation ?
5. Give examples for Decoding.
6. What is normal density ?
7. What is Bayesian Parameter estimation ?
8. Name any one tree methods.
9. Identify the different sections which come under an example ?
10. Explain Two-Category classification.
11. Explain Neyman-Pearson criterion.
12. Write an algorithm for HMM forward.
13. Explain Transition Probability ?
14. What is geometry and Terminology ?

P.T.O.

PART – B

1. Explain Learning and Adaptation.
2. Explain the terms feature extraction and Evidence pooling ?
3. Explain Minimum-Error-Rate Classification ?
4. Explain the three cases D.F. for normal density ?
5. Explain First-order Markov models ?
6. Write an algorithm for HMM decoding.
7. Explain Hidden Markov Model Computations with their models ?
8. Explain kn-Nearest-Neighbor Estimation ?

PART – C

1. Briefly explain the terms Likelihood, Feature space and Likelihood ratio.
2. Explain the different Sub-Problem of Pattern Classification.
3. Explain Minimum Criterion and Neyman-Pearson Criterion ?
4. Explain the different Hidden Markov Models.
5. Explain the multicategory case in linear discriminant functions and decision surfaces ?
6. Explain the two methods of minimizing the perceptron Criterion Functions ?

_____