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**Question Paper Code: 52206**

M.E. DEGREE EXAMINATION, MAY 2017

Elective

Communication Systems

15PCM529 - PATTERN RECOGNITION

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 20 = 100 Marks)

1. (a) Explain the concept of feature extraction in pattern recognition system with examples. (20)

Or

- (b) Explain the concept of Classification and Post processing in pattern recognition. (20)

2. (a) With the help of suitable diagram explain classifiers and functional structure of general statistical pattern classifier. (20)

Or

- (b) Explain the uni-variate and multivariate normal density functions with examples. (20)

3. (a) Write a short note on General theory of Bayesian Parameter estimation. (20)

Or

- (b) Illustrate a Gaussian mixture distribution in one dimension and also illustrate a mixture of three Gaussian in 2 dimensional space. (20)

4. (a) Explain Principal Component Analysis (PCA) with analytical treatment. (20)

Or

- (b) Write a short note on Fisher-Linear Discriminant. (20)
5. (a) Write algorithm for K-means clustering with the help of diagram. Explain how the K-means clustering produces a form of stochastic hill climbing in the log likelihood function. (20)

Or

- (b) Write a short note on application of normal mixture. (20)
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