Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_

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**End Semester Examination – Nov/Dec – 2018**

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| **Code :** | **14EC2062** | **Duration :** | **3hrs** |
| **Sub. Name :** | **MACHINE LEARNING ALGORITHMS FOR IMAGE PROCESSING** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Illustrate Pattern and feature extraction with an example from Image processing application. | CO1 | 15 |
| b. | List the applications of pattern recognition. | CO1 | 5 |
| (OR) | | | | |
| 2. | a. | Explain Gaussian model with its class dependence | CO1 | 5 |
| b. | Categorize the different approaches for developing statistical pattern recognition and explain any of them in detail. | CO1 | 15 |
|  |  |  |  |  |
| 3. | a. | Write short notes on pattern distortion. | CO1 | 5 |
| b. | Justify the need for feature extraction and feature selection with a practical example. | CO1 | 15 |
| (OR) | | | | |
| 4. |  | Explain the process involved in maximum likelihood estimation with a suitable pattern recognition example. | CO2 | 20 |
|  |  |  |  |  |
| 5. | a. | Differentiate supervised and unsupervised learning. | CO2 | 5 |
| b. | Assess the performance of Bayesian parameter estimation approach with an example. | CO2 | 15 |
| (OR) | | | | |
| 6. | a. | Formulate general decision rule. | CO2 | 5 |
| b. | Analyze the performance of a pattern classifier with respect to error and risk involved in the system. | CO2 | 15 |
|  |  |  |  |  |
| 7. |  | Compose the procedure to use Neural Network Structures for Pattern recognition applications. | CO2 | 20 |
| (OR) | | | | |
| 8. | a. | Write a short note on Support Vector Machine. | CO3 | 8 |
| b. | How will you measure Projected Data class separation? | CO3 | 4 |
| c. | Give the reason for adopting a neural computational architecture. | CO3 | 8 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | Differentiate physical neural network and artificial neural network. | CO3 | 8 |
| b. | Explain about Neural Network Based Pattern Associater. | CO3 | 12 |