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



**End Semester Examination – Nov / Dec – 2019**

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|  |  |  |  |
| **Code :** | **19CA3002** | **Duration :** | **3hrs** |
| **Sub. Name :** | **MACHINE LEARNING FOR IMAGE PROCESSING** | **Max. Marks :** | **100** |

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Q. No.** | **Sub Div.** | | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. |  | | Illustrate the modeling of outputs in machine learning. | CO1 | 20 |
| **(OR)** | | | | | |
| 2. |  | | Demonstrate the applications of decision trees in classification. | CO2 | 20 |
|  |  | |  |  |  |
| 3. | a. | | Explain how Perceptrons and support vector machines are used in classification. | CO2 | 10 |
| b. | | Explain any two rule based models in machine learning. | CO2 | 10 |
| **(OR)** | | | | | |
| 4. |  | | Explain the methods used for distance based clustering. | CO4 | 20 |
|  |  | |  |  |  |
| 5. |  | | Explain the probabilistic models used for modeling categorical data. | CO2 | 20 |
| **(OR)** | | | | | |
| 6. |  | | Illustrate the impact of feature construction and selection on effective machine learning. | CO2 | 20 |
|  | | | | | |
| 7. |  | | Explain how an image is viewed and processed by a computer. | CO5 | 20 |
| **(OR)** | | | | | |
| 8. | | a. | How do you smooth images using different filters in OpenCV? | CO5 | 10 |
| b. | Demonstrate segmenting of images using image thresholding. | CO5 | 10 |
|  | | | **Compulsory**: |  |  |
| 9. | a. | | Explain image classification using artificial neural networks. | CO6 | 10 |
| b. | | Explain the process of recognizing faces in an image. | CO6 | 10 |