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

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

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| **Code :** | **14EC2057** | **Duration :** | **3hrs** |
| **Sub. Name :** | **DIGITAL 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. | Explain the fundamental steps to be followed in processing digital images. | CO1 | 10 |
| b. | Relate the applications of Digital Image processing in the area of medicine with examples. | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | Compare the properties of spatial and intensity resolution in an image. | CO1 | 10 |
|  | b. | Define digital image and explain the formation of image in natural eye. | CO1 | 10 |
|  |  |  |  |  |
| 3. | a. | How images are acquired using sensor strips and sensor array? | CO1 | 10 |
|  | b. | Describe the anatomical structure of human eye with a neat sketch. | CO1 | 10 |
| (OR) | | | | |
| 4. | a. | Discuss the representation and the bits required to store a digitized image. | CO1 | 12 |
|  | b. | Write short notes on interpolation. | CO2 | 8 |
|  |  |  |  |  |
| 5. | a. | Explain the basic relationships between pixels in a digital image. | CO2 | 14 |
|  | b. | What do you mean by pseudo color image processing? | CO2 | 6 |
| (OR) | | | | |
| 6. |  | Analyze the performance of spatial domain filters? Support your answer with necessary mathematical equations. | CO2 | 20 |
|  |  |  |  |  |
| 7. | a. | Explain the model of a image degradation /Restoration process. | CO2 | 10 |
|  | b. | Comment on the effect of power law and contrast stretching transformations on digital images. | CO3 | 10 |
| (OR) | | | | |
| 8. | a. | Illustrate the need for Image compressing with a suitable example. | CO3 | 10 |
|  | b. | How wavelets can be used for image compression. | CO3 | 10 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | What are the types of thresholding? Explain the method of threshold selection for image segmentation with an example. | CO3 | 10 |
|  | b. | Design a mask and write the procedure to detect the points and edges in digital images. | CO3 | 10 |