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

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

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| **Code :** | **17EC3064** | **Duration :** | **3hrs** |
| **Sub. Name :** | **EMBEDDED 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 in detail the fundamental steps involved in digital image processing. | CO1 | 10 |
| b. | Describe the phenomena that indicate the subjective brightness is not a function of intensity alone. | CO2 | 10 |
| (OR) | | | | |
| 2. | a. | Discuss the following Gray level transformation functions (i) logarithmic and (ii) power-law. | CO2 | 8 |
| b. | Illustrate histogram equalization of an image. Discuss the mean to show the contribution of bit planes towards the image information. | CO1 | 12 |
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| 3. | a. | Compare frequency domain smoothing filters and discuss the reason for ringing effect. | CO2 | 8 |
| b. | Discuss how contrast enhancement and dynamic gray level compression is achieved by homomorphic filtering? | CO2 | 12 |
| (OR) | | | | |
| 4. | a. | Discuss the digital implementation of laplacian filter and its output | CO2 | 10 |
| b. | Describe the use of various gradient operators. | CO2 | 10 |
|  |  |  |  |  |
| 5. | a. | Write a brief note on Hit or Miss transform with a suitable example. | CO3 | 8 |
| b. | Explain how image segmentation is done using region growing and region splitting-merging methods. | CO3 | 12 |
| (OR) | | | | |
| 6. | a. | Propose a morphological procedure to fill the holes in given image. Clearly state the structuring elements and the steps involved in obtaining the result. | CO3 | 14 |
| b. | Discuss about morphological dilation and erosin. | CO3 | 6 |
| 7. | a. | Explain in detail the different types of boundary descriptors used for image descriptions. | CO4 | 14 |
| b. | Discuss about statistical moments. | CO3 | 6 |
| (OR) | | | | |
| 8. | a. | Illustrate with an example to extract chain code features . | CO4 | 8 |
| b. | Explain in detail the use of syntactic recognition of trees. | CO4 | 12 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Discuss Pyhton objects and dictionaries. | CO4 | 6 |
| b. | Give detailed explanation on various functions and modules of Python programming used for image enhancement. | CO5 | 14 |