Laboratory Manual

For the subject of

Image Processing

VISHAWAKARMA GOVT ENGG COLLEGE, CHANDKHEDA

INFORMATION TECHNOLOGY DEPARTMENT

Name of Student: Patel Harshil Yogendrakumar

Enrollment No:170170116031

Branch: Information Technology Semester: 6 Batch: B3

Academic Term: Even- 2019-20

Faculty In charge: Dr S D Panchal, Associate Professor, IT

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| Name of Institute: | Vishwakarma Government Engineering College, Chandkheda | | | | |
| Name of Department: | Information Technology, | | | | |
| Academic Term: | Even Term – CAY 2019-20 | | | | |
| Student Name: | Patel Harshil Yogendrakumar | | | | |
| Enrollment: | 170170116031 | Batch: | B3 | | |
| Sr. No | AIM | CO / PO | Date of Assigned | Date of Completion | Marks &  Signature |
| 1 | MATLAB Introduction and Environment study.   * To study Image processing tools in MATLAB. * List out the MATLAB Commands which are used in Image processing. | CO1 |  |  |  |
| 2 | Write a MATLAB program to Zoom AND Shrink the given Image. | CO2 |  |  |  |
| 3 | Write a MATLAB program for Grey Level Transformations.   * Image Negative Transformation. * Log Transformation. * Power-Law Transformation. | CO1  CO2  CO3 |  |  |  |
| 4 | Implement the following Image enhancement technique.   * Contrast Stretching. | CO1  CO2  CO3 |  |  |  |
| 5 | Obtain the Histogram of the several Images and do the analysis of the histograms and compare them. | CO3 |  |  |  |
| 6 | Implement the Following Low-pass filters and conclude your observations. (Frequency domain)   * Ideal low-pass filter * Gaussian low-pass filter. * Butterworth low-pass filter | CO1  CO2  CO3 |  |  |  |
| 7 | Implement the Following High-pass filters and conclude your observations. (Frequency domain)   * Ideal High -pass filter * Gaussian High -pass filter. * Butterworth High -pass filter | CO1  CO2  CO3 |  |  |  |
| 8 | Implement the Following Spatial domain filters for Image restoration and conclude your observations   * Mean filters (arithmetic, geometric, harmonic and contra-harmonics.) * Order Statistics filters. (median, max, min and alpha-trimmed filter). * Adaptive filters. (local variance, adaptive median). | CO1  CO2  CO3 |  |  |  |
| 9 | Implement the Following frequency domain filters for Image restoration and conclude your observations.   * Band reject filters (ideal, Butterworth, Gaussian) * Band pass filters (ideal, Butterworth, Gaussian) | CO1  CO2  CO3 |  |  |  |

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| Date of Submission: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Faculty Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_ |