

K. J. Somaiya Institute of Technology, Sion, Mumbai-22
(Autonomous College Affiliated to University of Mumbai)

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| Nov – Dec 2025-26 | | |
| (B. Tech / M. Tech.) Program: Information Technology Scheme III | | |
| Regular: TY Semester: V | | |
| Course Code: ITDLC 5043 and Course Name: Computer Vision | | |
| Date of Exam:01/12/2025 | Duration: 02.5 Hours | Max. Marks: 60 |

Instructions:

- (1) All questions are compulsory.
- (2) Draw neat diagrams wherever applicable.
- (3) Assume suitable data, if necessary.

| Q. No. | Question | Max. Marks | CO | BT level |
|------------|--|------------|-----|----------|
| Q 1 | Solve any two questions out of three: (05 marks each) | 10 | | |
| a) | Explain co-occurrence matrix with given example, input image (0, 0,1, 1: 0,0,1,1 : 0,2,2,2 : 2,2,3,3). | | CO1 | U |
| b) | Explain binary shape analysis concept. | | CO2 | U |
| c) | Explain Line Detection concept in computer vision. | | CO3 | U |
| Q 2 | Solve any two questions out of three: (05 marks each) | 10 | | |
| a) | Describe Projection Schemes for 3D vision. | | CO4 | U |
| b) | Explain Triangulation motion detection | | CO5 | U |
| c) | Describe Face Recognition application. | | CO6 | U |
| Q.3 | Solve any two questions out of three. (10 marks each) | 20 | | |
| a) | Explain thickening and thinning methods for binary shape analysis. | | CO2 | U |
| b) | Explain distance functions for the pixels. | | CO2 | U |
| c) | Explain RANSAC algorithm for Straight Line Detection. | | CO3 | U |
| Q.4 | Solve any two questions out of three. (10 marks each) | 20 | | |
| a) | Describe Shape from Shading (SFS) algorithm for 3D vision. | | CO4 | U |
| b) | Explain Bundle Adjustment algorithm in motion detection | | CO5 | U |
| c) | Explain Specific Examples on Surveillance. | | CO6 | U |