Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 80736

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2025.

Fifth/Sixth Semester

Electronics and Communication Engineering

CEC 366 — IMAGE PROCESSING

(Common to : Electronics and Telecommunication Engineering)

(Regulations 2021)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Mention the steps involved in Digital Image Processing.
2. Define DFT.
3. State the need for Fourier transform.
4. What is meant by Histogram processing?
5. State the importance of image restoration.
6. What is inverse filtering?
7. Define image segmentation.
8. List the applications of segmentation.
9. Mention the need for data compression.
10. Define MPEG.

PART B — (5 × 13 = 65 marks)

11. (a) Discuss the various components of digital image processing in detail.

Or

(b) Describe the process of Image Sensing and Acquisition.

12. (a) Discuss histogram equalization and histogram matching as gray level transformation techniques.

Or

(b) Explain the principles of color image enhancement.

13. (a) Discuss the different types of noise models in detail.

Or

(b) Discuss the working of an adaptive filter using LMs algorithm.

14. (a) Explain image segmentation with suitable diagrams.

Or

(b) Elucidate the application of morphological processing in medical imaging.

15. (a) Discuss the various Boundary descriptors in detail.

Or

(b) Explain the patterns and pattern classes in detail.

PART C — (1 × 15 = 15 marks)

16. (a) How would you preprocess the images to improve the segmentation accuracy? Compare and correlate various techniques based on accuracy.

Or

(b) Discuss trade-off between image compression techniques with example and performance.
