Reg. No. : E N G G T R E E . C O M

Question Paper Code : 20554

B.E./ B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2023

Fifth 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. What is meant by Image Acquisition?
2. What is the function of an image sensor?
3. What is meant by Gray-Level transformation?
4. What is spatial filtering?
5. Differentiate between image enhancement and restoration.
6. What is inverse filtering?
7. Define Thresholding.
8. What is the objective of image segmentation?
9. Define texture.
10. What is meant by image compression?

PART B — (5 × 13 = 65 marks)

11. (a) What are the components of digital image processing system? Explain the function of each component in detail. (13)

Or

(b) Discuss in detail about relationships between pixels. (13)

12. (a) Enumerate Discrete Fourier Transform in detail. (13)

Or

(b) Explain about smoothing and sharpening spatial filtering in detail. (13)

13. (a) How image restoration is performed using wiener filtering? Explain in detail. (13)

Or

(b) Explain in detail about various Mean filters. (13)

14. (a) Briefly discuss about edge linking via Hough transform. (13)

Or

(b) Explain any one of the region based image segmentation technique in detail Mention two applications of image segmentation. (13)

15. (a) What regional descriptors are used to represent an image? Explain in detail. (13)

Or

(b) Describe in detail about Patterns and Pattern classes. (13)

PART C — (1 × 15 = 15 marks)

16. (a) Compare and Correlate various image restoration filters with an example and algorithms. (15)

Or

(b) Discuss homomorphic filtering and explain in detail how it is used in correcting non-uniform illumination in images. (15)

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