QP CODE: 25021083

25021083

Reg No : .....

Name : .....

B.Sc/BCA DEGREE (CBCS) REGULAR / REAPPEARANCE / MERCY CHANCE EXAMINATIONS, FEBRUARY 2025

Sixth Semester

CHOICE BASED CORE COURSE - CS6CBT01 - DIGITAL IMAGE PROCESSING

Common for B.Sc Information Technology Model III, B.Sc Computer Science Model III, B.Sc Computer Applications Model III Triple Main & Bachelor of Computer Applications

2017 Admission Onwards

E3C651A4

Time: 3 Hours Max. Marks : 80

Part A

*Answer any **ten** questions.*

*Each question carries **2** marks.*

1. What is the storage requirement for a 1024*1024 binary image?
2. Define image acquisition.
3. Describe image processing software.
4. What is the use of knowledge base in digital image processing?
5. Describe digital image formation model.
6. Explain an application of image negative.
7. What is gamma correction?
8. What is histogram matching?
9. Define Fourier Transform.
10. What is mathematical morphology?
11. Define derivatives of a digital function.
12. What is thresholding?

(10×2=20)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*

13. Write note on spatial and intensity resolution.

14. Briefly explain brightness adaptation and discrimination.

15. Write note on image sampling and quantization.

16. Explain various basic relationship between pixels.

17. Explain the basics of set theory.

18. Describe intensity transformation function.

19. Opening and closing are duals with respect to set complementation and reflection. Elaborate on your view.

20. Explain basic methods for line detection with suitable example.

21. With suitable example explain the difference between region splitting and merging.

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **15** marks.*

22. Describe image processing and related fields.

23. Explain the basic operations of correlation and convolution using image filters.

24. A) Explain erosion and dilation operations with suitable examples. B) Describe the use of erosion and dilation operations.

25. A) Explain the concept of region growing with suitable example. B) Specify application of region growing.

(2×15=30)