B.Sc DEGREE (CBCS) EXAMINATION, APRIL 2021

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 Application

2017 Admission Onwards

F4C0F68F

Time: 3 Hours   Max. Marks : 80

Part A

*Answer any **ten** questions.*

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

1. Define pixel. Describe array representation for a digital image.

2. What is the use of knowledge base in digital image processing?

3. What is PPI?

4. Briefly describe digital image formation.

5. What is brightness discrimination?

6. What is N4(P) and ND(P)?

7. Describe any two basic intensity transformation.

8. Explain an application of image negative.

9. What is histogram of a digital image?

10. Write short note on opening and closing.

11. What are the gradient operators?

12. What is thresholding?

                                                                        (10×2=20)

Part B

*Answer any **six** questions.*

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

13. What is the goal of digital image processing? Compare image processing and Computer

Graphics.

14. Write short note on MRI and X rays imaging system.

15. What are the fundamental steps in image processing system?

16. What is log transformation? How does it useful in image processing?

17. Explain in detail Fourier Transform in frequency domain.

18. Briefly explain Power law transformation.

19. Explain the use of structuring elements in image processing.

20. Explain a method to detect line in an image.

21. Explain the concept of region growing with suitable example.

(6×5=30)

Part C

*Answer any **two** questions.*

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

22. Explain the basic components of an image processing system.

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

24. Explain hit-or-miss transformation.

25. A) Explain region splitting and merging with a suitable example.
    B) What is the use of region splitting and merging.

(2×15=30)