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**B.Tech. DEGREE EXAMINATION, MAY 2022**  
Sixth Semester

**18CSE469J – IMAGE PROCESSING AND PATTERN RECOGNITION**  
(For the candidates admitted from the academic year 2018-2019 to 2019-2020)

- Note:**
- (i) **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40<sup>th</sup> minute.
  - (ii) **Part - B** should be answered in answer booklet.

Time: 2½ Hours

Max. Marks: 75

**PART – A (25 × 1 = 25 Marks)**  
Answer **ALL** Questions

	Marks	BL	CO	PO
1. The cornea is the tough transparent tissue that cover's eyes (A) Eyelid (B) Exterior (C) Anterior (D) Lashes	1	1	1	2
2. In an M×N image matrix M is the number of _____. (A) Intensity levels (B) Colors (C) Rows (D) Columns	1	1	1	2
3. What is each element of the image matrix is called _____. (A) Dots (B) Pixels (C) Coordinates (D) Value	1	2	1	4
4. Imaging system produces (A) High resolution image (B) Voltage signal (C) Digitized image (D) Analog signal	1	1	2	2
5. To infer the display, we need image in a (A) Spatial domain (B) Frequency domain (C) Algebraic domain (D) Spatial and frequency domain	1	2	2	4
6. Which of the following is used to resolve the dark features in the image (A) Gaussian transform (B) Laplacian transform (C) Power-law transformation (D) Histogram specification	1	1	2	2
7. In _____ image we notice that the components of histogram are concentrated on the low side on intensity scale (A) Bright (B) Dark (C) Colourful (D) Binary	1	2	2	4
8. Highlighting the contribution made to total image by specific bits instead of highlighting intensity level changes is called _____. (A) Intensity highlighting (B) Byte-slicing (C) Bit-plane slicing (D) Piecewise linear transformation	1	1	2	2

9. Which of the following is the disadvantage of a smoothing filter? 1 2 2 4  
 (A) Blur innex pixels (B) Blur edges  
 (C) Sharp edges (D) Remove sharp transitions
10. \_\_\_\_\_ involves reversing the intensity levels on an image 1 1 3 2  
 (A) Log transformations (B) Piecewise linear transformations  
 (C) Image negatives (D) Bit-plane slicing
11. Pixels are allocated to categories according to the range of values in which a pixels lies is called 1 1 3 4  
 (A) Thresholding based segmentation (B) Edge-based segmentation  
 (C) Region based segmentation (D) Region split and merge
12. During segmentation every pixel of an image should be in 1 2 3 2  
 (A) Connected set (B) Boundaries  
 (C) Region (D) Concerned area
13. The hough transform is used to fit points as 1 2 3 4  
 (A) Line (B) Edge  
 (C) Curve (D) ROI
14. Which is meant by assuming any two neighboring that are both edge pixels with consistent orientation? 1 2 4 2  
 (A) Canny edge detection (B) Smoothing  
 (C) Segmentation (D) Sharpening
15. Points exceeding the threshold in output image are marked as 1 2 4 4  
 (A) 0 (B) 1  
 (C) 11 (D) X
16. With Dilation process images get 1 1 4 2  
 (A) Thinner (B) Shrunked  
 (C) Thickened (D) Sharpened
17. \_\_\_\_\_ is standard deviation value for constant area 1 1 4 4  
 (A) 0 (B) 1  
 (C) -1 (D) 2
18. \_\_\_\_\_ are the names of categories of color image processing. 1 2 5 2  
 (A) Full-color and pseudo-color processing and full-color processing  
 (B) Half-color and pseudo-color processing and multi-color processing  
 (C) Half-color and pseudo-color processing and multi-color processing  
 (D) Pseudo-color and multi-color processing
19. For diagonal edge detection we use 1 2 5 4  
 (A) 1D mask (B) 2D mask  
 (C) 3D mask (D) 4D mask
20. Thresholding is the example of 1 1 5 2  
 (A) Continuity (B) Similarity  
 (C) Recognition (D) Discontinuity

21. Erosion followed by dilation is called 1 2 5 4  
 (A) Opening (B) Closing  
 (C) Blurring (D) Translation
22. \_\_\_\_\_ is a color attributes that describe a pure colour 1 2 6 2  
 (A) Saturation (B) Hue  
 (C) Brightness (D) Intensity
23. Opening with rolling structuring element 1 2 6 4  
 (A) Sharps (B) Shrinks  
 (C) Smooths (D) Deletes
24. First derivatives in image segmentation produces 1 1 6 2  
 (A) Thick edges (B) Thin edges  
 (C) Fine edges (D) Rough edges
25. Image whose principle features are edges is called 1 2 6 4  
 (A) Orthogonal (B) Isolated  
 (C) Edge map (D) Edge normal

**PART – B (5 × 10 = 50 Marks)**

Answer **ALL** Questions

- |   | Marks | BL | CO | PO |
|---|-------|----|----|----|
| 26. a. Analysis in detail about an image and explain its various representation.                          | 10    | 3  | 1  | 2  |
| <b>(OR)</b>   |       |    |    |    |
| b. Illustrate any five filters uses neighborhoods metrics and explain in detail with an application.      | 10    | 4  | 1  | 2  |
| 27. a. Illustrate about histogram and analysis each steps in histogram equalization with an example.      | 10    | 3  | 2  | 2  |
| <b>(OR)</b>   |       |    |    |    |
| b. Illustrate about image sharpening filters. Explain the various types of its.                           | 10    | 4  | 2  | 4  |
| 28. a. Illustrate edge detection in detail with an example.   | 10    | 3  | 3  | 2  |
| <b>(OR)</b>   |       |    |    |    |
| b. Illustrate and explain in detail about image segmentation.   | 10    | 4  | 3  | 4  |
| 29. a. Analysis about texture feature and explain in detail about various categories of texture analysis. | 10    | 3  | 4  | 2  |
| <b>(OR)</b>   |       |    |    |    |
| b. Explain about image registration and its different types with an application.                          | 10    | 4  | 5  | 4  |
| 30. a. Analysis of top hat filters and its properties with examples.                                      | 10    | 3  | 5  | 2  |
| <b>(OR)</b>   |       |    |    |    |
| b. Explain morphological filters and its different types with an example.                                 | 10    | 4  | 6  | 4  |

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