(6 pages)

Reg. No. : ....

Code No.: 8069 **Sub. Code: ZCAM 32**

M.C.A. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2023.

Third Semester

Computer Application – Core

ADVANCED DIGITAL IMAGE PROCESSING

(For those who joined in July 2021-2022 onwards)

Time : Three hours　　　　Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. ———————— displays a log of MATLAB statements.
   (a) Command Window
   (b) Workspace browser
   (c) Command History window
   (d) Current directory browser

2. ———————— plays a central role in image processing in areas such as enhancement, compression, segmentation and description.
   (a) Frequency domain
   (b) Linear Filtering
   (c) Intensity histogram
   (d) Non Linear Filtering

3. Which Filtering blurs au image in Frequency domain Filter?
   (a) High pass　　　　(b) Low pass
   (c) Linear Spatial　　(d) Non Linear Spatial

4. The restoration process also referred to as
   (a) DE convolution
   (b) Convolution
   (c) Point spread function
   (d) Degradation

5. ———————— is used in analog television.
   (a) RGB models　　　　(b) NTSC Color system
   (c) HSC Color system　(d) CMY Color system

6. ———————— provides powerful insight into an image's spatial and frequency characteristics.
   (a) FWT　　　　(b) FFT
   (c) DFT　　　　(d) DWT

7. ———————— contains the smallest possible number of code symbols.
   (a) Huffman's encode　(b) Huffman's decode
   (c) Huffman's Code　　(d) None of these

8. ———————— is a variable length coding procedure is designed to reduce coding redundancy.
   (a) Logic Coding　　　(b) Arithmetic Coding
   (c) Predictive Coding　(d) None of these

9. ———————— sub divides an image into its constituent region or objects.
   (a) Segmentation　　　(b) Representation
   (c) Morphing　　　　(d) None of these

10. A Video is a sequence of images called ————————
    (a) Video Split　　　(b) Video Hitl
    (c) Video Transmission　(d) Video Frames

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Write a short notes on M-Function Programming.

    Or

    (b) Write about MATLAB save and retrieve work session.

12. (a) Discuss about Wiener Filtering.

    Or

    (b) Discuss 2D- Discrete Fourier Transform.

13. (a) Describe Localized feature Extraction.

    Or

    (b) Write the basics of colour image representation in MATLAB.

14. (a) Define Erosion. Discuss it.

    Or

    (b) Explain any two Redundancy Methods.

15. (a) Write the sources of 3D data sets.

    Or

    (b) What are Regional Descriptors? Discuss it.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) What is Histogram? Explain the Histogram equalization.

Or

(b) Enumerate about Digital Image Representation.

17. (a) Write the detail concept of filtering in the frequency domain.

Or

(b) Explain watershed algorithm.

18. (a) Define FWT. Explain it.

Or

(b) Explain about Color image Representation in MATLAB.

19. (a) Write Redundancy Methods. Discuss any two.

Or

(b) Enumerate about labeling connected components and morphology.

20. (a) What are the sources of 3D Data sets? Discuss it.

Or

(b) Describe Image processing and measurements in 3D images.

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