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Paper Code : PC-BME 701   Medical Image Processing

Time Allotted : 3 Hours

Full Marks :70

The Figures in the margin indicate full marks.
Candidate are required to give their answers in their own words as far as practicable

Group-A (Very Short Answer Type Question)

1. Answer any ten of the following :

[1 x 10 = 10]

  (i) Which tool is used in tasks such as zooming, shrinking, rotating, etc.?

  (ii) How does picture formation in the eye vary from image formation in a camera?

  (iii) Which can be removed by using a smoothing filter?

  (iv) Which is the next step in image processing after compression?

  (v) What are the names of the various colour image processing categories?

  (vi) How do you describe the term pixel depth?

  (vii) Dilation followed by erosion is called what?

  (viii) Which is a type of data compression?

  (ix) Why data compressed?

  (x) Lossy compression is the method which eliminate the data which is not noticeable and _____ compression does not eliminate the data which is not noticeable.

  (xi) The lower limit of the dynamic range ratio can be determined by what?

  (xii) Which wave can be visualized as an electromagnetic wave?

Group-B (Short Answer Type Question)
Answer any three of the following

[5 x 3 = 15]

2. Describe Histogram Equalization.

[5]

3. What are the demerits of Neighbourhood Averaging? How do you overcome it?

[5]

4. Compare Region and Edge based algorithm.

[5]

5. What is Image Segmentation? Why is it required?

[5]

6. What is common space variable distortions?

[5]

Group-C (Long Answer Type Question)
Answer any three of the following

[15 x 3 = 45]

7. (a) Mention all the types of Image Operations.

[10]

   (b) How many types of colour model are there?

[5]

8. (a) Describe Homomorphic Filtering with block diagram.

[10]

   (b) Write a short note on Derivative based Filtering.

[5]

9. (a) Write short notes on Dilation and Erosion.

[10]

   (b) Discuss thickening & thinning.

[5]

10. (a) Discuss Region and Edge Based Algorithm.

[10]

    (b) Compare Dilation and Erosion.

[5]

11. (a) Describe Lossy and Lossless compression in detail.

[10]

    (b) Give examples of Lossy and Lossless Compression.

[5]

*** END OF PAPER ***