

6E1551

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B.Tech. VI Sem. (Main/Back) Examination, June - 2022
Information Technology
6IT3-01 Digital Image Processing

Time : 2 Hours

Maximum Marks : 80
Min. Passing Marks : 28

Instructions to Candidates:

Attempt all five questions from Part A, four questions out of six questions from Part B and two questions out of three from Part C.

Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No.205)

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Part - A

(Answer should be given up to 25 words only)

All questions are compulsory

(5×2=10)

1. Define Histogram? (1)
2. What are the gray level transformation function of an image?
3. What is minimum mean square error filtering? (1)
4. What do you mean by image registration? (1)
5. Explain gradient operator?

Part - B

(Analytical/Problem solving questions)

Attempt any four questions

(4×10=40)

1. Explain Image sensing and acquisition with suitable diagram. (4)
2. What is spatial filtering? Define spatial correlation and convolution with an example. (2)
3. Explain image restoration model with diagrams. (8)
4. What is data redundancy? Also write its take? (5)
5. Explain descriptor in detail.

6. Explain :

a. IHPF.

b. Image - Enhancemnet.

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Part - C

(Descriptive/Analytical/Problem Solving/Design Questions)

Attempt any two questions

(2×15=30)

1. What is segmentation? Explain point, line and edge detection in brief. Also explain how to improve fast scanning algorithm by using morphological? (5)
 2. What is noise PDF. Explain erlang noise and Impulse noise. Differentiate between Gaussian noise and impulse noise? (4)
 3. What is image sharpening? Explain first and second order derivatives of image sharpening?
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