:56-08. ≈ 40108 (REVISED COURSE) CO-4174

(3 Hours) [Total Marks : 100

1) Question No. 1 is **compulsory**.
2) Attempt any **four** questions out of remaining **six** questions.
3) **Figures** to the **right** indicate **full** marks.

...empt any **five** :– 20

(a) Explain role of anti-alising filter.
(b) Explain, why median filtering performs well in image corrupted by impulse noise.
(c) What do you understand by the term spatial resolution ? What is governing factor ?
(d) Explain digital substraction Angiography.
(e) Explain how a chain code is normalized to rotation.
(f) What is Run length coding ?

Explain following image enhancement techniques and give their applications :– 12

(i) Log transformation
(ii) Gray level slicing
(iii) Contrast stretching.

Perform histogram equalization on the given image histogram : 8

Intensity	0	1	2	3	4	5	6	7
No. of Pixels	70	100	40	80	60	40	8	2

a) Derive the seperability and the shifting property of DFT and give it's applications. 10
b) What is Harr transform ? Apply Harr transformation on given matrix :– 10

12	12	12	12	14	12	12	12
12	12	12	12	14	12	12	12
12	12	12	12	14	12	12	12
12	12	12	12	14	12	12	12
12	12	12	12	14	12	12	12
16	16	16	16	14	16	16	16
12	12	12	12	12	12	12	12
12	12	12	12	12	12	12	12

a) Explain edge linking in detail. 10
b) Explain region based segmentation in detail. 10

a) Explain constant area coding techniques for image compression. 10
b) What is variable length coding ? And how it helps to compress image ? 10

a) Define and explain dilation and errosion operations. Explain how boundary extraction is achieved using these operations ? 10
b) Discuss the different reconstruction techniques used in computed tomography. 10

...ite short notes on any **four** :– 20

(a) Chain code
(b) Spatial filtering
(c) Split and merge method
(d) Discrete cosine transform
(e) Laplacian operator for edge detection.