

[Time: 3 Hours]

[Marks: 80]

Please check whether you have got the right question paper.

- N.B:**
1. Attempt any **four** questions out of **six** questions.
 2. Write with black ball-pen.
 3. Assumptions should be **clearly** stated.
 4. **Figures to right** indicate **full marks**.

1. (a) Explain parameters in detail which decide the quality of image. **10**
 (b) Differentiate direct & indirect imaging systems. **05**
 (c) Write short note on color images. **05**
2. (a) Draw and explain block diagram of PACS system. **10**
 (b) Explain different types of filtering mask in spatial domain. **10**
3. (a) What is need of histogram? Explain the process of histogram equalization with example. **10**
 (b) Write short note on logical operations. **05**
 (c) Explain cross-correlation & its applications. **05**
4. (a) Explain different types of noise in image. **06**
 (b) Describe opening and closing operations. **06**
 (c) Give applications of Biomedical Image Processing in Angiography & Mammography. **08**
5. (a) Explain surface & volume rendering. **08**
 (b) What is thresholding? Explain its types. **08**
 (c) Write short note on skeletonization. **04**
6. Write short note on (**any four**) **20**
 - (a) Extension to gray scale images
 - (b) Tortuosity
 - (c) Images from X-rays
 - (d) Human Visual pathway
 - (e) Connected components labelling.