1) Discuss the significance of sampling and quantization in processing of digital images. (M)
2) Discuss the importance of image pre-processing in understanding the digital image data. (M)
3) Justify 'Image analysis and understanding is an useful tool for better society building' (M)
4) Discuss the importance of biometric combining the current applications. (M)
5) Explain 'Image representation'. (M)

1) To create a digital image, need to convert the continuous sensed data into digital form. This involves two processes: sampling and quantization. sampling rate determines the spatial resolution of the digitized image. Digitizing the amplitude value is called quantization.
Quantization, involved in image processing, is a lossy compression technique achieved by compressing a range of values to a single quantum value. Example, reducing the number of colors required to represent a digital image makes it possible to reduce its file size.
To convert both of its axis (x, y), into a digital format. since an image is continuous not just in its co-ordinate (x-axis), but also in its amplitude (y axis), so the part that deals with digitizing of co-ordinates is known as sampling. Sampling is the process of converting a signal into a numeric sequence.

3) Surveillance is the monitoring of the behavior, activities, other changing information, usually of people for the purpose of influencing, managing, protecting. surveillance is very useful to law enforcement and government to maintain social control, recognize and monitor threats, investigate criminal activity. With advent programs such as information awareness program, technologies such as biometrics software.

4) Biometrics :- Authentification of a person - Banking, airport, electronic voting, defens sectors, secured transaction.
Banking typical tasks include document verification ; Banker cheque analysis. How these tasks can be achieved efficiently. Image is used to extract the hidden information in an obliterated image. Using suitable pre-processing techniques. It is possible to extract the hidden information in an image.

5) Pre-process is a common name for operations with images at the lowest level abstraction both input and output are intensity images. The aim of pre-processing is an improvement of the image data that suppresses unwanted distortions or enhances some image features important for further processing. Four categories of

Image pre-processing methods according to the size of the pixel neighbourhood. Image pre-processing methods use the considerable redundancy in image. Pre-processing to correct some degradation in the image.