

1. Discuss the significance of sampling and quantization in processing of digital image.
2. Discuss the importance of image pre-processing in understanding the digital image data.
3. Justify 'image analysis and understanding is an useful task for better society building.'
4. Discuss the importance of biometric technology consider the current applications.
5. Explain 'image representation'.

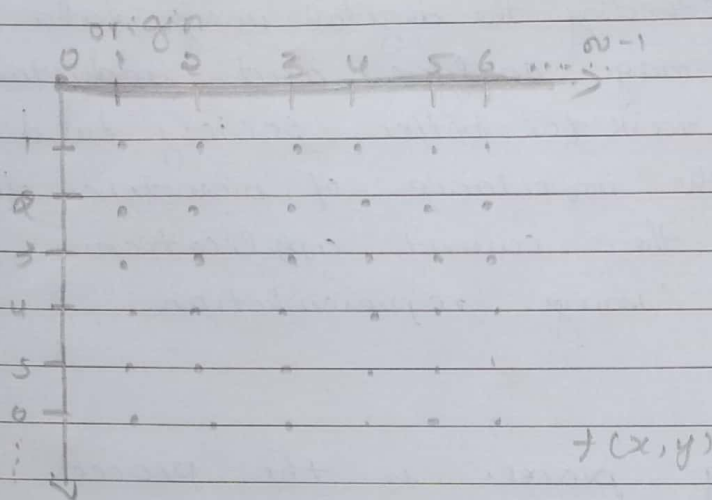
### Answer

1) Sampling process is the process of converting a signal into a numeric sequence. is called sampling.

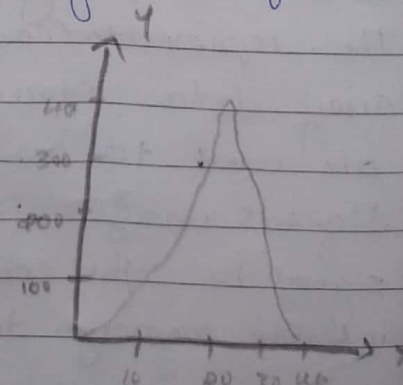
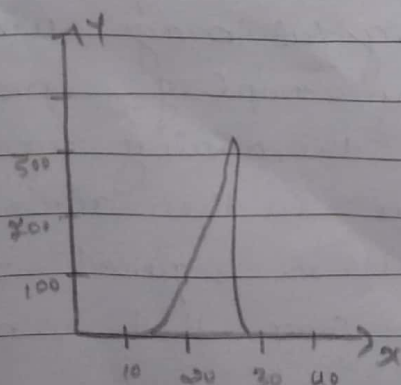
The transition between continuous values of the image function and its digital equivalent is called quantization.

The image process are two dimensional intensity function  $f(x, y)$  where  $x$  and  $y$  are the co-ordinates representing horizontally and vertically. The value of  $f(x, y)$  at any point gives the pixel value of the image. The image process must be digitized both are spatially and amplitude. The frame of grabber digitizer is used to sample and quantize the analogue video signal. Hence in order to create image and convert data into digital form are used sampling and quantization for process. The representation of digital image using the array data structure. The sampling process are used to convert the analog image to digital image. It is store in the analog sig signal in the computer. It is required to infinite memory to store since that is not possible.

so that convert the signals into digital form and then store it in computer and then performs the operations.



- 2) The digital image is represent involves the preprocessing steps that is involves the operations on images at the lowest level of the abstraction where both input and output image are intensity images. The pre processing is used to the image data the eliminates enhances of some image features suitable for some other processing image enhancement is very useful to pre processing technique Basically enhancement techniques is to bring out details that is obscured or simply to highlight certain feature of interest in the image such as changing size, brightness, and resize etc. for example enhance the brightness of an image





3. 1. Agriculture: The image processing for weed detection and removal and video exhibit. It is useful to classify the fruits base properties.
2. Banking: It is used to maintain different tasks include Document verification, person authentication etc.
3. Biometrics: It is very useful to different place of work for eg: Banking, Airport etc.
4. Remote sensing: the role of remote sensing for agricultural applications. It is perform various operations for better farming.

4) biometric identification technology is identification or verification of individuals based on their unique characteristics such as fingerprints, iris.

biometric technology used in the various place for example. Banking, Airport, Electric voting, Defense sectors, secured transactions for example fingerprint that is recognition looks for the unique patterns of ridges and it is individuals fingerprint. It is unique pattern to every individuals and it help ful to identify individuals from an entire world. It is interest to individuals. It is very help ful to identify the person.

5) Digital image processing deals with image segmentation, representation, image acquisition, pre processing, and discription and recognition and interpretation thereby enabling the analysis and understanding. The image representation of images can take many forms like such as color and

coded digitally and image is stored, how is structure an image file. selecting a good representation is only part of the solution for transforming image data into a form suitable for processing.