PART -A

1. Classify what is the name of the class that accepts an image's separation of luminesce and reflectance component?
   a. Homomorphic system
   b. Base class system
   c. Base separation system
   d. All of the above
2. Compressed image can be recovered back by
   a. Image contrast
   b. Image enhancement
   c. Image equalization
   d. Image decomposition
3. Which of the following would not suitable for lossy compression?
   a. Speech
   b. Video
   c. Text
   d. Image
4. Which technique is used to generate a compact representation of an image by preserving its important features?
   a. Histogram equalization
   b. Principal Component Analysis (PCA)
   c. Fourier transform
   d. Median filtering
5. What is the use of compression technique?
   a. To convert one file to another
   b. To reduce the size of data to save space
   c. To minimize the time taken for a file to be downloaded
   d. To compress something by pressing it very hard
6. Which of the following is not a correct example of Image Multiplication?
   a. Masking
   b. Shading Correction
   c. Pixelation
   d. Region of Interest Operations
7. What is the name of the process in which the known data is utilized to evaluate the value at an unknown location?
   a. Interpolation
   b. Acquisition
   c. Pixelation
   d. Masking
8. The complexity of ANN is dependent upon _____?
   i. a)Number of Neurons
   ii. b)Number of Nodes
   iii. c)Number of Layers
   iv. d)Number of Anodes
9. What is the primary purpose of a Convolutional Neural Network (CNN)?
   a. Object detection
   b. Image classification

c. Text generation
d. Reinforcement learning

10. Which does not belong to the feature descriptor algorithms?
    a. SIFT
    b. SURF
    c. LBP
    d. ROI
11. What is the objective of back propagation algorithm?
    a. to develop learning algorithm for multilayer feedforward neuralnetwork
    b. to develop learning algorithm for single layer feedforward neural network
    c. to develop learning algorithm for multilayer feedforward neural network, so that network can be trained to capture the mapping implicitly
    d. to develop learning algorithm for multilayer back propagation neural network.
12. The principal factor to determine the spatial resolution of an image is _____
    a. Quantization
    b. Sampling
    c. Contrast
    d. Dynamic range
13. Relate which side of the greyscale is the components of the histogram concentrated in a dark image?
    a. Medium
    b. Low
    c. Evenly distributed
    d. High
14. Identify which concept is used to represent the local features of an image that are invariant to scale and rotation?
    a. Hough transform
    b. Histogram of Oriented Gradients (HOG)
    c. Scale-invariant feature transform (SIFT)
    d. Eigenfaces
15. In ANN, Neurons interconnected among multiple network layers are referred to as _____?
    a. Source
    b. Nodes
    c. Anodes
    d. Cathodes
16. Which of the following algorithms is commonly used for image classification?
    a. K-means clustering
    b. Decision trees
    c. Convolutional Neural Networks (CNN)
    d. Support Vector Machines (SVM)
17. What is the primary purpose of a Recurrent Neural Network (RNN)?
    a. Image classification
    b. Text generation
    c. Reinforcement learning
    d. Object detection
18. Which of the following correctly describes the slightest visible change in the level of intensity?

a. Contour
b. Saturation
c. Contrast
d. Intensity Resolution

19. What is meant by Region of Interest (ROI) operations?
    a. Dilation
    b. Masking
    c. Shading correction
    d. Histogram
20. The total pixels in any given region defines the
    a. Brightness
    b. Intensity
    c. Perimeter
    d. Area

PART -B

1. Illustrate Object Detection using CNN
2. Can LDA be used on images?
3. How linear discriminant analysis is used for classification?
4. Write about Region of Interest (ROI) selection.
5. Describe in detail about horizontal and vertical run length coding with an example.
6. Different between lossy and loseless image compression.
7. Distinguish between Fixed Length and variable length coding.
8. How Local Binary Patterns (LBP) is used for Texture Analysis?
9. Write a brief notes on Grey Level Occurrence Matrix (GLCM)
10. What is the purpose of back propagation?
11. Why is backpropagation better than forward propagation?
12. Explain about the steps involved and applications of PCA algorithm.
13. Write about LDA (Linear Discriminant Analysis).
14. Draw and explain the architecture of Convolutional neural network (CNN).

PART -C

1. Is SVM good for image classification?
2. How To Implement Image Classification Using SVM explain?
3. Demonstrate Principal Component Analysis using a relevant example.
4. Summarize how PCA is used finding the most important features in a dataset
5. Summarize how does Histogram feature extraction work for image segmentation?
6. Explain the concept of error-free compression, also known as lossless compression, and illustrate its application using lossless predictive coding on a series of pixel values: 32, 42, 49, 52, 54, and 61.
7. Elaborates Lossless compression Technique from basics with Solved example.
8. Write the applications of lossless image compression?
9. Describe the reason for selecting ROI?
10. How is the region of interest utilised in medical image analysis?
11. Describe Harris corner detection and outline the distinctions between LDA and PCA.
12. Discuss in detail how ANN used for process identification with neat sketch.