



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, May 2018

Program: B.Tech CSE G&G

Subject (Course): Digital Image Processing

Course Code : GIEG 323

No. of page/s:

Semester – VI

Max. Marks : 100

Duration : 3 Hrs

Section A (each question consists of 4 marks)

1. Explain Sampling and quantization.
2. What is meant by convolution?
3. How effectiveness of quantization can be improved?
4. Describe the three types of discontinuity in digital images.

Section B (each question consists of 10 marks)

1. Discuss region oriented segmentation in details. Also perform the same segmentation to determine the dates from the bank cheques.
2. Explain about Image compression model. Perform the image compression technique on a simple MRI scan image for deployment on Cloud.
3. Explain color image fundamentals and apply the same to obtain the various color spectrums from a color printer.
4. What are patterns? Using proper diagrammatic example, differentiate between pattern classification and techniques of clustering.

Section C (each question consists of 20 marks, attempt any two)

1. Write short notes on application of artificial neural networks in Image Processing. Using proper grid based diagrammatic representation show the application of Neural networks for Telemetry image analysis. (Telemetry is the automatic recording and transmission of data from remote or inaccessible sources to an IT system in a different location for monitoring and analysis.)
2. Elser difference-map algorithm: a search algorithm for general constraint satisfaction problems. Originally used for X-Ray diffraction microscopy. Using the statement of the given algorithm design an algorithm which can deal with the same.
3. For the given image, design an algorithm based on the studied logics of DIP to find the pixels which are occupied by the “Smoke from chimney”.

