

SEAT No. _____

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No. of Pages : 2

SARDAR PATEL UNIVERSITY

M. SC. (GEOINFORMATICS)

SEMESTER – II

PS02CGIN21 (DIGITAL IMAGE PROCESSING)

09TH APRIL, 2018

Time : 10:00 a.m. to 01:00 p.m.

Marks : 70

Note : Answers of all the questions (including multiple choice questions) should be written in the provided answer book only.

Q-1 Pick up the most appropriate answer from the given alternatives and write in your answer book. (8)

- (1) _____ type of graph / chart shows independent data.
 - (A) Pie Chart
 - (B) Line Graph
 - (C) Bar Graph
 - (D) None
- (2) Scattered light reaching the sensor after being reflected from the Earth's surface is known as _____.
 - (A) Haze
 - (B) Sun Angle
 - (C) Radiometric
 - (D) Skylight
- (3) Averaging filters is also known as _____ filter.
 - (A) Low pass
 - (B) High pass
 - (C) Band pass
 - (D) None of the Mentioned
- (4) DPI stands for _____.
 - (A) dots per image
 - (B) dots per inches.
 - (C) dots per intensity.
 - (D) diameter per inches
- (5) Which term is used to indicate that pixels are multiplied by different coefficients?
 - (A) Weighted average
 - (B) Squared average
 - (C) Spatial average
 - (D) None of the Mentioned
- (6) In _____ image we notice that the components of histogram are concentrated on the low side on intensity scale
 - (A) bright
 - (B) dark
 - (C) colourful
 - (D) All of the Mentioned
- (7) Image can be sharpened using _____.
 - (A) low pass filter
 - (B) contouring
 - (C) erosion
 - (D) high pass filter
- (8) Image compression is
 - (A) making image look better
 - (B) sharpening the intensity-transition regions
 - (C) minimizing degradation over image
 - (D) reducing the redundancy of the image data

C.P. T.O.)

Q-2 Attempt the following: (ANY SEVEN)

(14)

- 1) What is Image? List out and define types of image.
- 2) What is visualization? List out types of visualization.
- 3) What is Image Compression? List out and define two types of image compression techniques.
- 4) What are image negatives?
- 5) What is image segmentation?
- 6) What are the types of image enhancement available?
- 7) Define 4 and 8 neighbors of a pixel.
- 8) What is bit plane slicing?
- 9) Define average filter and mean filter.

Q-3 (a) Write a note on basic and other 2-D Transformations

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(b) Write a note on 2D Composite Transformations.

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OR

(b) Describe the elements of visual interpretation in detail.

Q-4 (a) Explain Steps in Digital Image Processing in detail.

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(b) What you mean by error in image? List out and define various types of Radiometric and Geometric errors in satellite image.

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OR

(b) Classify image sensing sensors and write short note.

Q-5 (a) What is histogram of an image? How does it modify an image in equalization and specification techniques?

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(b) What are the image sharpening filters? Explain the various types of it.

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OR

(b) Write a note on Basic Grey Level Intensity Transformations.

Q-6 (a) What is Image Classification? List out the uses of Image Classification. Explain both techniques of Image Classification.

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(b) What is data redundancy? Explain variable length coding technique with example.

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OR

(b) Write a note on Compression model.

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