



Please, answer the following questions

Question 1 (19 marks)

(a) (7 marks)

With clear sketches describe the electromagnetic spectrum showing the different wavelength bands.

(b) (6 marks)

Using sketches as possible describe three types of atmosphere scattering.

(c) (6 marks)

Using clear sketches, explain the energy interactions that take place when electromagnetic energy from the sun hits the earth's surface.

Question 2 (18 marks)

(a) (6 marks)

Describe two differences between aircraft and satellite remote sensing and their implications for the data acquired.

(b) (6 marks)

List and describe four characteristics of remote sensing images.

(c) (6 marks)

Using sketches explain the principle of an across-track scanner.

Question 3 (18 marks)

(a) (6 marks)

Consider a scanner with an IFOV of 2mrad at a flying height of 500m. Calculate the diameter of the area at the nadir.

(b) (6 marks)

Using an example explain how a filter works.

(c) (6 marks)

Using sketches describe the information contained in the histogram of a digital image.

Question 4 (18 marks)

(a) (6 marks)

Compare image and map coordinate systems (make a figure with comments).

(b) (6 marks)

Discuss the purpose of acquiring stereo-image pairs.

(c) (6 marks)

Explain the purpose of monoplotted. What inputs do you need?

**Question 5 (19 marks)**

(a)(7 marks)

Describe the seven image interpretation elements.

(b)(6 marks)

Give three reasons for field observations in the process of image interpretation.

(c) (6 marks)

Give two examples of cases where visual interpretation is not possible even with good quality images.

**Question 6 (18 marks)**

(a)(6marks)

Name the different steps for the process of image classification.

(b) (6 marks)

Discuss the principles of image classification.

(c)(6 marks)

Describe a classification algorithm? Give two examples.

With our best wishes

This exam measures the following ILOs														
Question Number	Q1-a	Q2-c				Q2-d	Q3-a				Q3-b	Q4-c		
Skills	a2-1	a5-2				b4-1	b5-2				c4-1	c8-1		
	Knowledge & Understanding Skills					Intellectual Skills					Professional Skills			