

السؤال الرابع عند مرتبة



Damietta University  
Faculty of Science  
Environmental Science Department

Second Semester Exam (2024)  
Date: 13/6/2024  
Time allowed: 1 hours

### Remote sensing and GIS Applications Examination

For 4<sup>th</sup> Year Environmental Sciences, Environmental Science and Chemistry  
Students' (Course Cod: 419 ب)

Question 1 : (12 marks)

Choose the correct answer.

- Gamma rays has a frequency ..... than radio waves  
A) Lower (B) Higher
- Radiation in .....IR region is used for remote sensing purposes very similar to radiation in the visible portion.  
A) reflected IR (B) thermal IR (C) enhanced IR
- The spatial resolution of panchromatic band of SPOT-5 is.....  
A) 2.5&5m (B) 2.5&10m (C) 2.5&15m
- Thermal imagers are typically ..... that detect emitted radiation  
A) Along-track (B) Across-track
- .....is the angular cone of visibility of the sensor  
A) IFOV (B) IFOS (C) IFVS
- If the orbit is sunsynchronous, the ..... pass is on the sunlit side  
A) ascending (B) descending
- The reflectance spectrum of a material is a plot of the fraction of radiation reflected as a function of the incident .....  
A) wavelength (B) frequency (C) transmission
- Turbid water has some sediment suspension which increases the reflectance in the .....end of the spectrum  
A) blue (B) green (C) red

**Question 2 : (44 marks)**

Complete the following sentences

1. In NIR region, the reflectance is higher than in the visible band due to the .....in the leaves.
2. IKONOS data has ..... km swath width and collects four multispectral bands at ..... m resolution.
3. On May 31, 2003, Landsat 7 ETM+ experienced a failure in its SLC mechanism, resulting in .....scanning pattern.
4. The temporal resolution of Landsat 2 MSS is .....days
5. The two different ways of representing and displaying remote sensing data, either ..... or .....
6. In .....colour composite images, the display colour assignment for any band of a multispectral image can be done in an entirely arbitrary manner.
7. Satellite orbit selection can vary in terms of ..... , ..... and .....
8. Each SPOT satellite carries two ..... sensors, constructed with .... Scanners.
9. Whiskbroom scanners introduce distortion of images because .....
10. In whiskbroom Scanners, each line is scanned from one side to another using....
11. Diffuse reflection occurs when the surface is .....and the energy is reflected ..... in all directions.
12. Because the .....level of each pixel is the same for each primary colour, they combine to form a black and white image
13. At sunrise a greater proportion of the .....wavelengths penetrate the atmosphere.
14. Because of the relatively long wavelength of thermal radiation, atmospheric .....is minimal.
15. If a sensor used 6 bits to record the data, there would be .....digital values available, ranging from 0 to .....

**Question 3 : (4 marks)**

State whether the given statement is True or False :

- 1- Microwave region from about 0.1 mm to 1 m.
- 2- In autumn, more reflection in the leaves occur in the red wavelengths
- 3- If there is suspended sediment present in the upper layers of the water body, then this will allow better reflectivity.
- 4- High resolution of image is known as fine resolution.

Best wishes

Dr. Rasha Abou Samra