**Assignment # 3**

**Deadline- 30 June 2024**

1. What are the advantages of hyperspectral imaging? If the spectral range of the 288 channels of the CASI (Compact Airborne Spectrographic Imager) is exactly 0.40 µm to 0.90 µm and each band covers a wavelength of 1.8 nanometres (nm), will there be any overlap between the bands?
2. Differentiate between SAR and RAR. Explain why the use of synthetic aperture radar (SAR) is the only practical option for radar remote sensing from space.
3. What are the advantages of microwave remote sensing? Why is microwave remote sensing better suited for monitoring tropical rain forests than optical remote sensing?
4. Outline the steps how RADAR works? Differentiate between range resolution and azimuth resolution of radar systems?