M. Sc. 2nd Semester Examination, 2022

GEO-INFORMATICS

Course Title: Thermal, Microwave Remote Sensing and Application

Course ID: 23163 **Course Code: GI 203T**

Full Marks: 40 **Time: 2 Hours**

The figures in the margin indicate full marks
Candidates are required to give their answers in their own words as far as practicable
All questions are of equal marks
Answer any four questions selecting at least one from each unit

Unit-1: Concept of thermal energy

1. Explain the radiation laws governing the radiation from black body? Distinguish between radiant and kinetic temperature. 6+4=10

2. Give an account on thermal sensors with special reference to the Landsat mission? Write a note on atmospheric interaction with thermal radiation. What is brightness temperature? 5+3+2=10

Unit-2: Basic of Microwave Remote Sensing (RS)

3. What do you mean by passive microwave remote sensing? Explain the principles of SAR interferometry. Distinguish between active and passive microwave remote sensing. 2+6+2=10

4. What are range and azimuth resolution of RADAR system? Explain polarimetric synthesis and polarimetric decomposition. Distinguish between optical and microwave remote sensing. 3+5+2=10

Unit-3: Processing of thermal and microwave image

5. Write the applications of thermal remote sensing. Explain the sources of thermal image degradation and corrective measures. 4+6=10
6. Explain how SAR data is unique in flood mapping and soil moisture estimation. Highlight agricultural and forestry application of active microwave remote sensing. 5+5=10

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