

M.Sc. 3rd Semester Examination, 2023

REMOTE SENSING AND GIS

(Geoinformatics in Earth Sciences)

PAPER—RSG-303(C.1 & C.2)(New)

Full Marks : 50

Time : 2 hours

The figures in the right hand margin indicate marks

*Candidates are required to give their answers in
their own words as far as practicable*

Illustrate the answers wherever necessary

PAPER—RSG-303C.1

(Option 3 : Fundamentals of Earth System)

GROUP – A

Answer any two questions : 2×2

(Turn Over)

1. What are the primary Earthquake waves ?
2. Define Faults.
3. Characteristics of the Igneous Rocks.
4. What are the geomorphic agents ?

GROUP – B

Answer any **two** questions : 4 × 2

5. Discuss the nature and composition of earth's atmosphere.
6. Bring out the distinctions between the 'Continental drift' theory and the 'plate tectonics' theory.
7. Explain the formation of Metamorphic Rocks.

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REMOTE SENSING AND GIS

*(Advanced Remote Sensing and Areas
of Applications)*

PAPER – RSG-304.1&304.2(CBCS)

Full Marks : 50

Time : 2 hours

The figures in the right hand margin indicate marks

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their own words as far as practicable*

Illustrate the answers wherever necessary

PAPER – RSG-304.1

(Advanced Remote Sensing Techniques)

GROUP – A

Answer any two questions from the following : 2 × 2

1. What is training samples for image classification ?
2. Which spectral regions are used for LIDAR survey ?
3. What is endmember ?
4. At what temperature of the object usually thermal remote sensing occur ?

GROUP – B

Answer any two questions from the following : 4×2

5. Compare kinetic temperature and radiant temperature in Thermal Remote Sensing.
6. Compare Hard and Soft classification approaches in Image classification.
7. Write a short note on Wien's Displacement Law.

8. Critically compare multispectral and hyperspectral remote sensing.

GROUP – C

Answer any **one** question from the following : 8×1

9. Write a note on supervised classification techniques. Explain maximum likelihood algorithm. $4 + 4$
10. Explain the basic principles of microwave remote sensing. Write down the application areas of hyperspectral remote sensing. $5 + 3$

PAPER – RSG-304.2

(*Application of Geo-informatics*)

GROUP – A

Answer any **two** questions : 2×2

1. What are the effects of volcanic eruption ?

2. Write the controlling factors for drainage patterns.
3. Why is the false colour combination used in a satellite image ?
4. What are the eight fundamental elements of image interpretation ?

GROUP – B

Answer any **two** questions : 4 × 2

5. Discuss, with examples, the influence of volcanism and diastrophism on the evolution of landscape.
6. Discuss the process of mechanical and chemical weathering and show their relationship with soil formation.
7. What are the different types of digital image enhancement techniques ?

8. Discuss how enhancement techniques can improve the delineation of water features, aiding in water quality assessment and hydrological modeling.

GROUP – C

Answer any one question : 8 × 1

9. Discuss the specific techniques used to enhance vegetation indices and highlight their importance in environmental modeling, such as assessing vegetation health and biomass.
10. Discuss about the application of geospatial techniques in the field of urban planning.

[Internal Assessment – 10 Marks]
