 PG/IIIS/RSG/303C.1&303C.2
/24

# M. Sc. 3rd Semester Examination, 2024

## REMOTE SENSING AND GIS

PAPER – RSG-303C.1 & 303C.2

*Full Marks* : 50

*Time* : 2 hours

Answer **all** questions

*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-303 C.1

( *Option 3 : Fundamentals of Earth System* )

[ *Marks* : 20 ]

## GROUP–A

Answer any **two** questions of the following : $2 \times 2$

1. What is uniformitarianism ?

2. Mention the causes of "metamorphism".

3. What landforms indicate deranged pattern of drainage ?

4. Define 'topography'.

## GROUP–B

Answer any **two** questions of the following : $4 \times 2$

5. Why is remote sensing used in earth science ?

6. Briefly discuss the constructive process of landform creation.

7. Explain the types of plate boundaries.

8. Distinguish between fault and joint in structural geology.

## GROUP—C

Answer any **one** question of the following : $8 \times 1$

9. What are the geological structural features easily discernable from remote sensing data ? Explain with example the interpretation elements for lithological mapping. 4 + 4

10. Define lineaments and geomorphic anomalies. Enumerate the relationship between the drainage and geological features of an area. 4 + 4

## PAPER — RSG-303 C.2

( *Option C : Application of Geo-informatics in Earth Science* )

[ *Marks* : 20 ]

## GROUP–A

Answer any **two** questions of the following : $2 \times 2$

**11.** What are metamorphism and their types ?

**12.** Define disaster. What are the primary types of natural disasters ?

**13.** What are basic elements of image interpretation.

**14.** What is digital terrain model ?

## GROUP–B

Answer any **two** questions from the following : $4 \times 2$

**15.** How could GIS be used in structural mapping ?

**16.** How are spectral signatures used to differentiate between different rock types in remote sensing imagery ?

17. What spatial analysis techniques are used in GIS-based mineral targeting ?

18. What are the key principles of disaster risk reduction ?

## GROUP – C

Answer any **one** question from the following : $8 \times 1$

19. Discuss in detail the interrelationship between Hydrology, Geomorphology and Ecology as key factors in multivariate data modeling for landslide hazard zonation and their impact on landslide susceptibility.

20. Define 'seismicity'. How the lineament study using remote spatial science could be useful for predicting seismicity of peninsular region of India. $2 + 6$

**[ Internal Assessment — 10 Marks]**