M.Sc. 3rd Semester Examination, 2023

REMOTE SENSING AND GIS

PAPER — RSG-301.1&301.2

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-301.1

(*Application of Geo-Informatics*)

GROUP — A

Answer any **two** questions from the following : 2 × 2

1. Differentiate between DSM and DTM ?

2. Explain how remote sensing is used to detect and monitor surface water bodies.

3. Define seismicity and its relevance in understanding earthquake activity.

4. What are the key factors that influence the intensity of ground shaking during an earthquake ?

GROUP — B

Answer any **two** questions from the following : 2×4

5. How can GIS play a pivotal role in developing smart cities ?

6. What factors are considered in the hydraulic design of canals for efficient water conveyance ?

7. How does GNSS help in quantifying Plate Motion in Himalayas by exploring it's role in identifying active fault systems ?

8. Explore the vital role of real-time monitoring through geo-informatics in advancing early warning systems for natural disasters and how these systems enhance prompt evacuation and mitigation measures.

GROUP – C

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

9. Discuss the application of remote sensing techniques in crop inventory with a detail flow chart of methodology. Mention the importance of infra red region in mapping vegetation cover.

10. Explain the significance of remote sensing in hydro-geomorphological studies, particularly in the context of identifying and characterizing ground water potential zones. Discuss the advantages of using satellite imagery and other remote sensing tools for comprehensive assessments.

PAPER — RSG-301.2

(*Spatial Decision Support System*)

GROUP — A

Answer any **two** questions from the following : 2×2

1. What do you mean by constraints in decision making ?

2. Differentiate between DSS and SDSS.

3. Mention the limitation of rating method.

4. What are the three phases of decision making ?

GROUP — B

Answer any **two** questions from the following : 2×4

5. Write a brief note on defining set of evaluation criteria.

(*Continued*)

6. Critically discuss about the types of decision problems in GIS.

7. Which techniques would you follow for standardization of criteria maps ?

8. Mention the advantages and disadvantages of pairwise comparison method.

GROUP — C

Answer any **one** questions from the following :

8×1

9. What do you mean by AHP ? Mention the procedure of site suitability analysis with a suitable example and chart.   3 + 5

10. Analyze the role of GIS in SDSS. Briefly mention the elements and structure of MCDA.

3 + 5

[**Internal Assessment — 10 Marks**]

———————

M.Sc. 3rd Semester Examination, 2023

REMOTE SENSING AND GIS

PAPER — RSG-301.1 & RSG-301.2

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-301.1

(*Application of Geo-Informatics*)

Full Marks : 20

GROUP—A

Answer any **two** of the following questions :

2×2

1. Explain how remote sensing is used to detect and monitor surface water bodies.

2. Differentiate between DSM and DTM?

3. Define seismicity and its relevance in understanding earthquake activity.

4. What are the key factors that influence the intensity of ground shaking during an earthquake?

GROUP—B

Answer any **two** of the following questions :

4×2

5. What factors are considered in the hydraulic design of canals for efficient water conveyance?

6. How Does GNSS help in quantifying plate Motion in Himalayas by exploring it's role in identifying active fault systems?

7. Explore the vital role of real-time monitoring through geo-informatics in advancing early warning systems for natural disasters and how these systems enhance prompt evacuation and mitigation measures.

8. How can GIS play a pivotal role in developing smart cities?

GROUP – C

Answer any **one** of the following question :

8×1

9. Discuss the application of remote sensing techniques in crop inventory with a detail flow chart of methodology. Mention the importance of infra red region in mapping vegetation cover. $5 + 3$

10. Explain the significance of remote sensing in hydro-geomorphological studies particularly in the context of identifying and characterizing ground water potential zones. Discuss the advantages of using satellite imagery and other remote sensing tools for comprehensive assessments.

8

PAPER — RSG-301.2

(*Spatial Data Science and SDSS*)

Full Marks : 20

GROUP–A

Answer any **two** of the following questions :

2 × 2

1. What do you mean by reinforcement learning?

2. Mention the importance of training dataset in ML techniques?

3. What is big data in GIS?

4. What are the three phases of decision making?

GROUP—B

Answer any **two** of the following questions :

4×2

5. Briefly mention the application areas of spatial data science?

6. Critically discuss about the types of decision problems in GIS?

7. Which techniques would you follow for standardization of criteria maps?

8. What do you mean by GeoAI? Mention the potentialities of big data in addressing real world problems.

GROUP—C

Answer any **one** of the following question :

8×1

9. Critically explain the applications of supervised and unsupervised ML techniques.   8

10. Analyze the role of GIS in SDSS. Briefly mention the elements and structure of MCDA. $3 + 5$

[Internal Assessment — 10 Marks]

————————