

Total number of printed pages-4

14 (SEM-IV) GGY 4206 (A)

2025

GEOGRAPHY

(Optional)

Paper : GGY-4206 (A)

(Geoinformatics)

Full Marks : 80

Time : Three hours

***The figures in the margin indicate
full marks for the questions.***

Unit-I

(Spatial Analysis in GIS)

Answer ***any one*** question carrying **16** marks
and ***three*** questions carrying **8** marks each.

1. Critically examine the advantages of and constraints to the integration of spatial and non-spatial data in a GIS. 16
2. What are the various tools available in a GIS for the analysis of spatial data ? How is spatial analysis useful ? 8+8=16

3. Write short notes on **any two** of the following : 4×2=8
- (i) DEM
 - (ii) Attribute data
 - (iii) Data conversion one format to another
4. Examine the factors that govern spatial data infrastructure. 8
5. How factors should be kept in mind when undertaking an environmental impact assessment of an ecologically vulnerable area ? 8
6. What constitutes topology in a GIS and what rules govern it ? 8

Unit-II

(Image Analysis, Interpretation and Processing)

Answer **any one** question carrying **10** marks and **any one** question of **5** marks.

7. Examine the principles underlying image interpretation. 10
8. Examine the methods of image enhancement and the need for this process. 10

9. What gains are derived from undertaking image rectification ? 5
10. How is image registration useful ? 5

Unit-III

(Digital Image Classification)

Answer **any one** question carrying **10** marks and **one** question of **5** marks.

11. Examine the concept of post-classification accuracy assessment and why does the need to undertake it arise. 10
12. Examine its benefits of ground truth verification and the conditions under which it can become a prohibitive exercise. 10
13. Do there exist any differences between supervised and unsupervised classification methodologies ? 5
14. "A variety of classification algorithms currently exist and this has increased the need to test their accuracy in different environmental settings." Briefly examine this view. 5

Unit-IV***(Application of GIS and Remote Sensing in
Modelling the Environment)***

Answer ***any one*** question carrying **10** marks.

15. Can GIS aid in optimizing the efficiency of land governance efforts such as updating land records or geospatial mapping ? Could the cost of such an exercise be prohibitive in terms of financial resources and man hours ?
 16. Critically evaluate the use of remotely sensed datasets in the management of urban areas under climate change scenarios.
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