

## U.G. 3rd Semester Examination - 2024

## GEOGRAPHY

[MAJOR]

Course Code : GEOG-MJ-T-3

(Fundamentals of Remote Sensing, GIS and GNSS)

[NEP-2020]

Full Marks : 60

Time : 2½ 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.*1. Answer any **ten** questions from the following:

2×10=20

- a) What is electromagnetic radiation?
- b) What is sensor?
- c) What is meant by spectral band?
- d) What is infrared radiation?
- e) What is datum?
- f) What is digital image?
- g) What are fiducial marks in an aerial photograph?
- h) What is the principal point in an aerial photograph?

[Turn over]



- i) What is nadir point?
- j) What is photogrammetry?
- k) Define GIS.
- l) What is meant by overlay analysis?
- m) What is Global Positioning System?
- n) What is meant by image enhancement?
- o) What is a buffer in GIS?

2. Answer any **four** questions from the following:

5×4=20

- a) Distinguish between spatial resolution and spectral resolution.
- b) Differentiate raster data from vector data.
- c) Specify any two methods of GIS-GNSS integration.
- d) Illustrate any two methods for measuring the scale of an aerial photograph.
- e) Give the concept of spectral signature.
- f) Distinguish between Sun-Synchronous and Geostationary Satellites.

3. Answer any **two** questions from the following:

10×2=20

- a) Discuss the basic principles of visual image interpretation in remote sensing.
- b) Elaborate the application of remote sensing in managing agriculture and monitoring urban growth. 5+5=10
- c) Analyse the essential components of GIS. Specify the data manipulation process in GIS. 7+3=10
- d) Illustrate the principles of GNSS positioning with suitable diagrams. 5+5=10