

Total number of printed pages–2

14 (GGY–4) 4193 (RS&GIS-P)

2025

**GEOGRAPHY**

Paper: GGY–4193

***Remote Sensing and GIS (Practical)***

*Full Marks: 40*

Time: 3 hours

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

- 1 (a) An aerial photograph of a terrain having an average elevation of 1400 m is taken at a scale of 1:7500. The focal length of the camera is 15 cm. Calculate the altitude of the flight above mean sea level. 5  
  
(b) The length of a particular river on the aerial photograph is 8 cm and the scale of a topo map covering the same area is 1:10000. The length of the same river in the topo map is 16 cm. Find out the scale of the photograph. 5
2. Perform the necessary steps to transform the raw data (*supplied to you in the form of .tiff format*) to a spatial data using an appropriate projection system. Furthermore, create vector layers of at least three features (*Forest, River Course with sandbars and Settlement agglomeration*) represented through polygon and One feature (*River Canal*) represented through polyline from the image and calculate the total area and length of the features. Prepare the map layout and Interpret the results. 3+4+3 =10
3. (a) Carry out the necessary procedure to delineate and calculate the bank line shifting pattern (*at least taking 3 cross sections*) in the meandering course of a tributary of Brahmaputra river for two different years supplied to you. Further compute the statistics of cross section wise change and interpret the results. 4+6=10

**Or**

(b) Prepare a LULC map from the satellite imagery supplied to you (5" X 5") using a standard color scheme. Further calculate the areal coverage of each LULC category using graphical method and also mention the interpretation keys adopted during classification (*map has to be supplied by the college*). 4+4+2=10

4. Convert the following location data from degree minute seconds into degree decimals and plot it on the map of Assam (*shape file supplied to you*). Also find out the name of the district where the landmark is located. Further make a layout of the map using appropriate symbols.

3+3+2+2=10

| Landmark Name                  | Latitude      | Longitude     |
|--------------------------------|---------------|---------------|
| Raimona National Park          | 26°38'7.81"N  | 89°58'7.24"E  |
| Manas National Park            | 26°47'31.27"N | 91°14'16.37"E |
| Orang National Park            | 26°35'6.22"N  | 92°18'27.06"E |
| Nameri National Park           | 26°55'52.81"N | 92°52'39.38"E |
| Kaziranga National Park        | 26°36'8.36"N  | 93°22'28.90"E |
| Dibru Saikhowa National Park   | 27°39'25.78"N | 95°21'52.67"E |
| Sikhna Jwhlwao National Park   | 26°43'12.81"N | 90°17'17.70"E |
| Dihing Patkai National Park    | 27°18'23.55"N | 95°32'42.69"E |
| Chakrashila Wildlife Sanctuary | 26°20'17.01"N | 90°19'51.41"E |
| Bornadi Wildlife Sanctuary     | 26°47'19.05"N | 91°44'52.14"E |
| Pobitora Wildlife Sanctuary    | 26°13'46.93"N | 92° 3'14.77"E |

5. Practical Notebook 5

6. Viva Voce 5





# A Part of Uttarakhand



30°30'0"N  
77°46'0"E

30°28'0"N

30°26'0"N

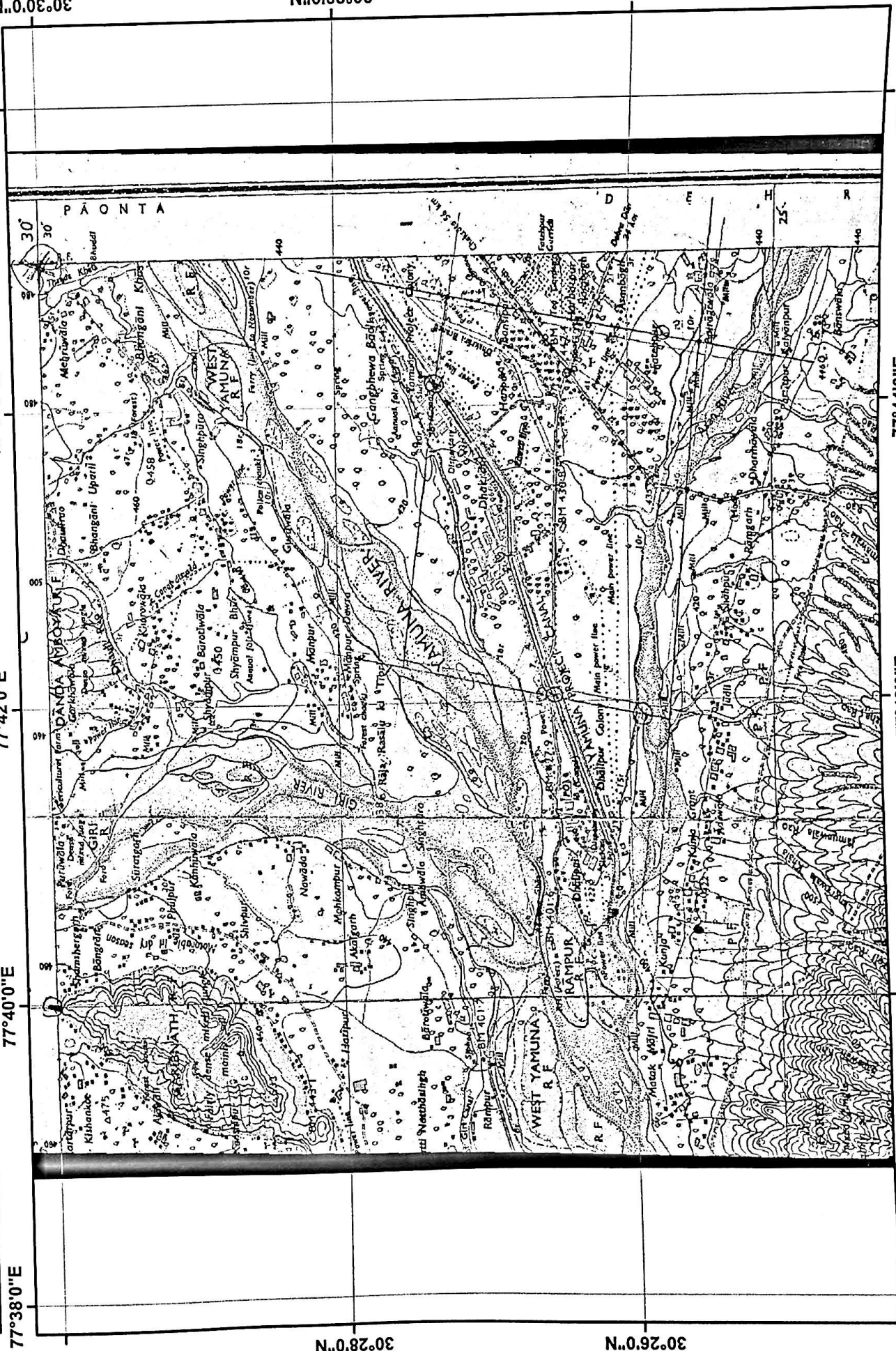
77°46'0"E

77°44'0"E

77°42'0"E

77°40'0"E

77°38'0"E



30°28'0"N

30°26'0"N

