Roll No: ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

The Assam Royal Global University, Guwahati
Royal School of Environmental & Earth Sciences
M.A/M.Sc. 4th semester (Geography)
Semester End Examination, July 2023
Course Title: GIS and GPS: Principles and Applications
Course Code: GEO164D401

Time: 3 Hours　　　　　　　　　　　　　　　　　　**Maximum Marks: 70**

Note: Attempt all questions as per instructions given.
The figures in the right-hand margin indicate marks.

Section – A

1. Attempt **all questions**. (Maximum word limit 50)　　　　　**2 x 8**

   a. Define GIS and its components.
   b. Write what are the GIS data types and structures.
   c. Write what is Digital Elevation Model and its use.
   d. What are the sources and characteristics of SRTM data?
   e. What are the sources of GIS data collection?
   f. What is arithmetic and weighted overlays?
   g. Write what is GPS and its basic principles.
   h. Name some GPS applications in the field of geography.

Section – B

2. Attempt **any two** of the following:　　　　　　　　　　**6 x 2**

   a. Discuss the history of GIS with its definitions and components.
   b. Explain GIS coordinate systems with data types and structures.
   c. Write what is RDBMS and its functions in GIS software.

3. Attempt **any two** of the following:　　　　　　　　　　**7 x 2**

   a. Describe what is DEM and its construction and utility.
   b. Describe Cartosat satellite and its applications in urban studies.
   c. Discuss various satellite data products and its applications in different fields.

4. Attempt **any two** of the following:　　　　　　　　　　**7 x 2**

   a. What is the process of GIS data collection and creating databases?
   b. Explain what is arithmetic and weighted overlays.
   c. Explain the processes of buffering and proximity analysis.

5. Attempt **any two** of the following:　　　　　　　　　　**7 x 2**

   a. Explain the working principles of GPS and its uses.
   b. Discuss the importance of GPS in the navigation system.
   c. Explain how GPS helps in Geographical data analysis.