

2018

GEOGRAPHY

( Major )

Paper : 6·4

( Principles and Applications of  
Remote Sensing, GIS and GPS )

Full Marks : 60

Time : 3 hours

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

1. Answer the following as directed : 1×7=7

- (a) What is geostationary satellite?
- (b) Electromagnetic radiation travels at the velocity equal to that of light. Then what is the velocity of light?
- (c) "Attribute data are non-spatial data."  
State whether the above statement is True or False.

- (d) Select the correct statement from the following in respect of raster and vector data models :
- (i) Data structure is simple in vector model.
  - (ii) Data acquisition is slow in raster model.
  - (iii) Data volume is large in raster model.
  - (iv) Geometrical accuracy is low in vector model.
- (e) The photographic camera works in the photographic band. What is the wavelength range of the photographic band?
- (f) What is an active sensor?
- (g) Which one of the following is not related with GPS?
- (i) Atomic clock
  - (ii) Code-based receiver
  - (iii) Radio signal
  - (iv) Radiometric correction

( Choose the correct answer )

2. Answer the following questions in short :

2×4=8

- (a) What is photogrammetry?
- (b) Give the names of any two GIS softwares.
- (c) What is atmospheric window?
- (d) What do you mean by resolution of sensors?

3. Answer any *three* of the following :

5×3=15

- (a) Explain the functions and characteristics of different components of GIS.
- (b) Explain how the 3-D stereoscopic view from aerial photographs can be obtained using stereoscope.
- (c) Describe the nature of spatial and non-spatial data with suitable examples.
- (d) Explain the working principles of GPS.
- (e) Citing necessary examples, briefly describe the different types of sensor carrying platforms.

4. Give a brief account of the history of remote sensing. 10

Or

Explain the characteristics of electromagnetic radiation (EMR) with a neat diagram. 10

5. Explain the applications of GIS in thematic representations of geographical phenomena. 10

Or

Discuss the structures of raster and vector data models with suitable diagrams. 5+5=10

6. Explain the principles and procedures involved in GPS survey for mapping geographical features. 10

Or

Discuss the role and applications of remote sensing in forest resource management. 10

★ ★ ★