# 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

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