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(CBCS)

(6th Semester)

GEOGRAPHY

TENTH PAPER

(Remote Sensing and Geographical Information System)

Full Marks : 75

Time : 3 hours

The figures in the margin indicate full marks for the questions

(SECTION : A—OBJECTIVE)

(Marks : 10)

Put a Tick (✓) mark against the correct answer in the brackets provided : 1×10=10

1. The point of intersection of two fiducial axis connecting the opposite axis of the fiducial marks is

- (a) nadir ()
- (b) principal point ()
- (c) camera axis ()
- (d) optical axis ()

2. Which one of the following is one of the factors that determines the scale of an aerial photograph?

(a) Relief displacement ()

(b) Camera lens ()

(c) Focal length ()

(d) Conjugate Principal Point ()

3. Which one of the following has the highest frequency in electromagnetic spectrum?

(a) Infrared ray ()

(b) Radio wave ()

(c) Visible ray ()

(d) Gamma ray ()

4. The process of digital images to improve the fidelity of the brightness value is

(a) atmospheric correction ()

(b) radiometric correction ()

(c) geometric correction ()

(d) spatial correction ()

5. Which resolution describes the specific wavelengths that the sensor can record within the electromagnetic spectrum?

- (a) Spatial resolution ()
- (b) Radiometric resolution ()
- (c) Temporal resolution ()
- (d) Spectral resolution ()

6. Grid cells to represent the spatial variation of a feature are

- (a) vector data model ()
- (b) raster data model ()
- (c) hybrid data model ()
- (d) geo-data model ()

7. Attribute data is also known as

- (a) spatial data ()
- (b) raster data ()
- (c) aspatial data ()
- (d) vector data ()

8. The relative brightness or colour of objects on an image refers to

(a) tone ()

(b) shadow ()

(c) texture ()

(d) pattern ()

9. Human activity or economic function associated with a specific piece of land is related to

(a) urban sprawl ()

(b) land use ()

(c) land cover ()

(d) land resources ()

10. GIS deals with which kind of data?

(a) Numeric data ()

(b) Binary data ()

(c) Spatial data ()

(d) Complex data ()

(SECTION : B—SHORT ANSWERS)

(Marks : 15)

Write short notes on/Answer the following :

3×5=15

UNIT—I

1. Types of aerial photograph

OR

2. What is photogrammetry?

UNIT—II

3. Define electromagnetic spectrum.

OR

4. Radiometric and geometric correction

UNIT—III

5. Polar satellite

OR

6. Geo-synchronous satellite

UNIT—IV

7. Raster data models

OR

8. Spatial and aspatial data

UNIT—V

9. Define urban sprawl.

OR

10. Importance of Satellite Remote Sensing in Forest Mapping

(SECTION : C—DESCRIPTIVE)

(Marks : 50)

Answer the following questions :

10×5=50

UNIT—I

1. Define aerial photography. Elaborate the historical development of aerial photography.

4+6=10

OR

2. Describe the geometry of aerial photograph. Support your answer with suitable diagrams.

8+2=10

UNIT—II

3. What is remote sensing? Describe the different kinds of platform used for remote sensing studies.

2+8=10

OR

4. What is EMR? Describe the interaction of EMR with the Earth's atmosphere.

2+8=10

UNIT—III

5. Explain any two important methods of data editing.

5+5=10

OR

6. Describe the different types of resolution of satellite images with example.

10

UNIT—IV

7. Discuss the various components of GIS.

10

OR

8. Distinguish between Vector and Raster data models with neat sketch.

5+5=10

UNIT—V

9. What are the different elements of image interpretation with example? 10

OR

10. What are land use and land cover? Explain the relevance of RS and GIS in land use/land cover change studies. 3+7=10
