

**2 0 2 3**

( CBCS )

( 6th Semester )

**GEOGRAPHY**

TENTH PAPER

**( Remote Sensing and GIS )**

*Full Marks : 75*

*Time : 3 hours*

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

**( SECTION : A—OBJECTIVE )**

( Marks : 10 )

Tick (✓) the correct answer in the brackets provided :

1×10=10

**1.** The geometric centre of the aerial photograph is known as

(a) conjugate principal point ( )

(b) principal point ( )

(c) fiducial marks ( )

(d) fiducial axes ( )

**2.** In which type of aerial photograph the horizon is visible?

(a) Highly oblique photograph ( )

(b) Low oblique photograph ( )

(c) Vertical photograph ( )

(d) None of the above ( )

**3.** Remote sensing satellites maintain orbits at the height of

(a) below 10 km ( )

(b) 30 km–100 km ( )

(c) 100 km–300 km ( )

(d) above 500 km ( )

**4.** The spectral region of the electromagnetic radiation which passes through the atmosphere without much attenuation is known as

(a) ozone hole ( )

(b) ultraviolet wavelengths ( )

(c) atmospheric windows ( )

(d) All of the above ( )

5. The shape of a pixel of an image can only be

(a) rectangular ( )

(b) square ( )

(c) oval ( )

(d) octagonal ( )

6. Low-pass filters

(a) smoothen images ( )

(b) sharpen images ( )

(c) correct colour ( )

(d) correct geolocation ( )

7. Which of the following formats is most convenient for GIS output?

(a) .html ( )

(b) .xls ( )

(c) .doc ( )

(d) .tif ( )

**8.** Which of the following is an example of hardware in GIS?

(a) QGIS ( )

(b) ArcGIS ( )

(c) User ( )

(d) Scanner ( )

**9.** Urban sprawl means

(a) spreading of urban development on underdeveloped land near a city ( )

(b) spreading of urban development on distant village ( )

(c) urban development on city centre ( )

(d) new urban development in remote areas ( )

**10.** In forest management, GIS can offer

(a) spatial information only ( )

(b) both spatial and temporal information ( )

(c) temporal information only ( )

(d) neither spatial nor temporal information ( )

**( SECTION : B—SHORT ANSWER )**

( Marks : 15 )

Write on the following :

3×5=15

UNIT—I

1. Fiducial marks

**OR**

2. Sidelap

UNIT—II

3. Active sensors

**OR**

4. INSAT

UNIT—III

5. Georeferencing

**OR**

6. Geometric correction

UNIT—IV

7. Raster data

**OR**

8. Vector data

UNIT—V

9. Forest monitoring

**OR**

10. Types of land use

**( SECTION : C—DESCRIPTIVE )**

( Marks : 50 )

Answer the following questions :

10×5=50

UNIT—I

1. What is aerial photography? Trace the history of aerial photography.

4+6=10

**OR**

2. What do you mean by photogrammetry? Define vertical aerial photograph and state its advantages and disadvantages.

3+3+2+2=10

UNIT—II

3. Describe how electromagnetic radiation interacts with the surface of the earth.

10

**OR**

4. Describe the different platforms used for remote sensing. Discuss the advantages and disadvantages of each platform.

4+3+3=10

UNIT—III

5. What is image classification? What are the steps involved in supervised image classification? What are the advantages of supervised image classification over unsupervised image classification?

3+4+3=10

**OR**

6. What are the sources of errors in spatial and nonspatial data? Describe the process involving correction of spatial data errors.

3+7=10

UNIT—IV

7. What is GIS? Briefly discuss each component of GIS. 4+6=10

**OR**

8. What do you mean by spatial and non-spatial data in GIS? Differentiate between the two types of data. 6+4=10

UNIT—V

9. Discuss the importance of remote sensing and geographical information system in monitoring urban sprawl and planning for urban development. 5+5=10

**OR**

10. Define and differentiate the terms 'land use' and 'land cover'. How can remote sensing and geographical information system help in mapping of land use/land cover? 5+5=10

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