G-2/224/21

Roll No. .....

M.Sc. II Semester Examination, 2021

GEOLOGY

Paper IV

(Photogeology, Remote Sensing and GIS)

Time : 3 Hours] [Max. Marks : 80

Note : *All questions are compulsory. Question Paper comprises of 3 sections. Section A is objective type/multiple choice questions with no internal choice. Section B is short answer type with internal choice. Section C is long answer type with internal choice.*

SECTION A **1×10=10**

(Objective Type Questions)

Fill in the blank :

1. ..... is a method of collecting information about any ground object under investigation from a distance without being in contact.

2. Indian Space programs launched by ..... organization.

3. The electromagnetic wave consists of two fluctuation fields one ..... and the other ..... at the right angle to one another.

4. Visible spectrum ranges from ..... to ..... .

5. The acroym GIS stands for ..... .

6. GIS accuracy can be associated with ..... geometry of feature and attribute data.

7. Photo scale is the ratio of ..... and ..... .

8. In an aerial photograph, a mark at the centre of edge is known as ..... .

9. ..... images, are usually associated corner reflectors.

10. In a satellite image, sand is identified by ..... tone.

SECTION B **4×5=20**

(Short Answer Type Questions)

Note : *Answer the following questions in 250 words.*

Unit-I

1. Write notes on the following :

(a) Aerial Photographs and their types,

(b) Nadir point.

Or

(a) Pocket stereoscope,

(b) Identification of Lineaments in Aerial photographs.

Unit-II

2. What do you understand by Sensor. Give the types of sensors.

Or

Define EMR. How EMR is related to Remote Sensing ?

Unit-III

3. How will you interpret landforms and drainage with the help of tone and texture in a satellite picture ?

Or

How do you interpret metamorphic rock in a stereo pair ?

Unit-IV

4. Define the term Digital Image Processing.

Or

What is GPS ? Discuss in brief the principles of GPS.

Unit-V

5. Describe the significance of remote sensing studies in identification of lineaments folds and faults.

Or

How the Remote Sensing data is useful in Engineering Geology problems ?

SECTION C **10×5=50**

(Long Answer Type Questions)

Note : *Answer the following questions in 500 words.*

Unit-I

1. Describe the concept of stereoscopic vision with a neat diagram. Write the types of stereoscopes and their use.

Or

Write notes on :

(a) Vertical, low oblique, High-oblique photographs,

(b) Vertical exaggeration.

Unit-II

2. Write various types of Images. Discuss qualitative interpretation of thermal images.

Or

Describe RADAR images. How they are helpful in identifying geological features ?

Unit-III

3. With the help of Remote Sensing Technique, how would you identify the coarse grained, fine grained clastic sedimentary rocks and chemically precipitated sedimentary rocks.

Or

Write notes on :

(a) Identification of extrusive body with stereographic pairs.

(b) Identification of Glacial landfoms.

Unit-IV

4. Write notes on :

(a) Edge enhancement,

(b) Linear and nonlinear stretching.

Or

What are the steps taken in Image Restoration and Image Enhancement to improve distorted satellite images for end user ?

Unit-V

5. Describe the significance of Remote Sensing in mineral exploration and petroleum exploration.

Or

Discuss the application of Remote Sensing in targeting groundwater.

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