2018

(April)

GEOLOGY

(Honours)

(Remote Sensing and Hydrogeology)

(GELH-601)

Marks : 56

Time : 3 hours

The figures in the margin indicate full marks for the questions

ıswer **four** questions, selecting **one** from each Unit

GROUP—A

(Remote Sensing)

UNIT—I

1. *(a)* Define Remote Sensing. 1

(b) Describe the energy/data flow in a typical remote sensing system with neat sketches. 5

(c) Explain in brief how the electromagnetic spectrum is most commonly presented.

(d) Describe the important spectral regions used for remote sensing purposes.

2. (a) List and describe the different elements of visual photo interpretation.

(b) Discuss briefly on the application of multispectral data for sedimentary rocks' mapping.

UNIT—II

3. Write short notes on any *four* of the following : $3\frac{1}{2}\times4$

(a) Principle of stereoscopy

(b) Vertical exaggeration

(c) Mosaics

(d) Annotations

(e) Geometry of vertical aerial photograph

(f) Advantages and limitation of aerial photographs

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4. Write explanatory notes on/Answer any *two* of the following : $7\times2=14$

(a) What is spatial data? Describe briefly the two fundamental different types of geographic models where GIS works.

(b) Major application areas of GIS

(c) Components of GPS

GROUP—B

(Hydrogeology)

UNIT—III

5. (a) Illustrate hydrologic cycle with the help of a suitable sketch. 7

(b) Define groundwater. Give a brief account on the distribution of groundwater. 1+6=7

6. (a) What is Darcy's law? Derive the fundamental equation for groundwater movement with neat sketches. 2+8=10

(b) Differentiate between water table and piezometric surface. 4

(Turn Over)

UNIT—IV

7. Explain the principle, field procedure and interpretation of resistivity survey for groundwater investigation. 4+4+6=1

8. Write explanatory notes on any *two* of the following : 7×2=1

   (a) Selection of sites for sinking wells

   (b) Concept of artificial recharge

   (c) Indo-Gangetic alluvial province

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