M.Sc. 3rd Semester Examination, 2010

REMOTE SENSING AND GIS

PAPER—IX (RG-2101 & 2102)

Full Marks : 40

Time : 2 hours

The figures in the right-hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

PAPER—RG-2101

[*Marks* : 20]

Answer any **two** questions

1. Define Landuse. Describe with a neat flowchart, the preparation of mauza wise landuse-land cover map in 1:4000 scale, using high resolution Remote Sensing data.   2 + 8

2. What are the basic data required for hydrological studies ? Explain with a diagram the main phases of global hydrological cycle. Explain hydrologic equation. $3 + 5 + 2$

3. What are the possible approaches of hydrological modeling ? Write the criteria for hydrologic parameter estimation. Explain one of them with suitable example. $3 + 7$

4. Briefly describe the approaches and methods adopted in assuming precipitation using Remote Sensing Techniques. 10

PAPER—RG-2102

[*Marks* : 20]

Answer any **two** questions

1. Describe with the help of a diagram the response pattern of soil moisture in different portion of the electromagnetic spectrum. 10

2. Discuss on major elements of water quality assessment. What is the role of Remote Sensing in water quality monitoring ? $4 + 6$

(*Continued*)

3. How does Landuse pattern control runoff volume ? Explain with the help of an empirical model how satellite image, soil map and rainfall data can be used to estimate the annual runoff from a watershed.   3 + 7

4. Write short notes on any *two* of the following :   5 x 2

   (*i*) Techniques of dam site selection

   (*ii*) Factors associated with canal alignment

   (*iii*) Role of hypsometric curve of a drainage basin in decision making of landuse planning

   (*iv*) Principles and Techniques of assessment and Flood Mapping.