PG/IIIS/RSG-301/15

M.Sc. 3rd Semester Examination, 2015

RS & GIS

(Application of Geoinformatics and Spatial Database Management/Spatial Decision Support System)

PAPER – RSG-301(Gr.-A + B)

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

GROUP –A

(Application of Geoinformatics and Spatial Database Management)

[*Marks* : 20]

Answer any **two** questions

1. "Sufficient rainfall does not always ensure sufficient ground water recharge." – Explain with reference to varying lithological conditions. How electrical resistivity and seismic refraction help in ground water trageting ? 5 + 5

2. How presence of oil films, in organic suspended material, organic chlorophyll, disolved organic matter and surface temperature of water can be directly monitored from remotely sensed data ? 2 + 2 + 2 + 2 + 2

3. How variation in moisture content of soil influence the reflectance, emittance and back-scatter at different wavelengths of electromagnetic spectrum ? What are the similarities and dissimilarities of response pattern of cloud and show in different wavelengths ? 6 + 4

4. Explain the basic parameters for prioritization of 'micro-watershed' in the context of natural resources management. State briefly the different types of 'rainwater harvesting structures' for micro-watershed development. 5 + 5

GROUP –B

(*Spatial Decision Support System*)

[*Marks* : 20]

Answer any **two** questions

1. What are the salient characteristics of decision making process ? Differentiate structured and semi structured decision problem. What are the principle components of SDSS ? 4 + 3 + 3

2. Write a brief account on elements of multi-criteria decision analysis. What do you mean by criteria and alternatives of decision problem ? Compare MADM and MODM approach of decision making. 5 + 2 + 3

3. What do you mean by criteria weighting ? Critically explain the ranking and rating methods of criterion weighting. 3 + 7

4. (*a*) Briefly discuss the Analytic Hierarchy Process (AHP) with a suitable example and flow chart.

(*b*) How far it is acceptable in spatial decision making? 7 + 3