M.Sc. 3rd Semester Examination, 2015

RS & GIS

PAPER — RSG-302(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

(Research Methodology and Project Management)

GROUP — A

(Fundamental of Research)

[ Marks : 20 ]

Answer any two questions

1. (a) What is research methodology?

   (b) What are the steps involved in research process?

   (Turn Over)
(2)

(c) How do you formulated the research problem? \(2 + 5 + 3\)

2. (a) Explain "the meaning of hypothesis".

(b) Explain the characteristics of hypothesis with suitable example.

(c) State the important uses of hypothesis. \(2 + 4 + 4\)

3. (a) What is sampling?

(b) Explain the importance of sampling.

(c) Explain the characteristics of a good sample. \(2 + 4 + 4\)

4. Short notes (answer any two questions): \(2 \times 5\)

(i) Define cluster sampling

(ii) Distinguish between Regression and Correlation analysis.

(iii) Define stratified Random Sampling

(iv) Explain probability sampling.

PG/IIIS/RSG-302/15 (Continued)
GROUP — B

[ Marks : 20 ]

Answer any two questions

1. What is model calibration and validation? What do you mean by alternative hypothesis \( (H_a) \) and null hypothesis \( (H_0) \)? Why testing of hypothesis is needed in any research? 2 + 5 + 3

2. Estimate Standard Error (68% level of confidence) of the following regression analysis of \( x \) and \( y \) variables

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>( x )</th>
<th>( y )</th>
<th>( r^2 )</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>6.1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>9.5</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>11.9</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>9</td>
<td>1.2</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>8.3</td>
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</tbody>
</table>

What will be the range of predicted score at 95% level of confidence where \( \hat{y} = 7 \) ? Why ethical issues are important for any research? 6 + 2 + 2
3. Define research project. Write down the steps involved in preparation of a research project proposal with an example of application of geoinformatics in water resource management.

4. (i) Discuss a project lifecycle in details.

(ii) How do you classify projects?

(iii) Discuss in brief risk management plan.