PG/IIIS/RSG-302/19

M.Sc. 3rd Semester Examination, 2019

REMOTE SENSING AND GIS

(Fundamentals of Research and Geospatial Project Management/Geostatistics)

PAPER – RSG-302.1+ 302.2

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

Write the answers to questions of each Paper in separate books

RSG-302.1

(Fundamentals of Research and Geospatial Project Management)

[*Marks* : 20]

GROUP–A

Answer any **two** questions : 2 × 2

1. What do you mean by hypothesis ?

2. What do you mean by 'literature' for any research activities ?

3. Differentiate between research methods from Research techniques ?

4. What are the criteria for good research ?

GROUP–B

Answer any **two** questions : 4 × 2

5. Explain the importance of research design.

6. What is sampling ? Define probability sampling.

7. What are the differences between conceptual and physical data models ?

8. Identify the major geo-spatial data, their types and sources. Give example (s).

GROUP–C

Answer any **one** question : 8 × 1

9. How can a GIS application be evaluated ? Discuss the role of flowcharts in the management and design of GIS projects. 3 + 5

10. Place the importance of 'literature' review while selecting the *aim* and *methodology* of a research problem. 8

RSG-302.2

(*Geostatistics*)

[*Marks* : 20]

GROUP–A

Answer any **two** questions : 2 × 2

11. Define interpolation and spatial interpolation.

12. Write Tobler's law.

13. Write four major applications of interpolation.

14. Compute RMSE with following data :

Obs : 20, 22, 25, 26, 40, 42, 50, 65, 70

Pre : 21, 21, 25, 25·5, 48, 42, 51, 66, 70

GROUP–B

Answer any **two** questions : 4×2

15. Write the equations of linear regression for univariate, bi-variate and multivariate.

16. Write a short note on the general relationship between elevation and temperature. Draw a scatter diagram to justify relationship between them using gives data set.

17. Write a short note on spatial autocorrelation and Moran's I Index.

18. Write a note on krigging and co-krigging.

GROUP–C

Answer any **one** out of two question : 8×1

19. Write a note on Theissen Polygon. With the given data, draw Theissen polygons

Lat	22.5	23	24	24.5	23.5
Lon	70.5	73	72	71.5	74
Data	20	18	18.5	19	18.6

20. Write a note on IDW calculate value of P using 4, 6, 8 neighbours.
employing IDW.

Data value ( )
Distance from P [ ]