

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)**

CLASS: M. Sc.
BRANCH: Geoinformatics

SEMESTER: II
SESSION: SP/22

SUBJECT: GI 510 RESEARCH METHODS AND STATISTICS IN GEOINFORMATICS

TIME:

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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Q.1(a)	How is a research problem formulated? OR Write a Geospatial problem statement in the context of usability of satellite data	[5]
Q.1(b)	Write data and methodology used in the LULC 3 rd cycle national project. OR Write data and methodology used in the NUIS project.	[5]
Q.2	Explain the difference between Research Hypothesis, Research Questions, Research Objectives, and Research Methodology with the help of an example. OR Describe the various components of a research proposal.	[10]
Q.3(a)	What are 'population', 'sample' and 'sampling frame'? Elaborate Probability and Non-Probability sampling methods OR In a class of 100 students with a mean height of 175 cm with standard deviation of 5 cm, how many students are shorter than you if your height is 165cm? (approximately).	[5]
Q.3(b)	What are different types of Sampling approaches? OR A mining company has estimated the average quantity of iron ore extracted to be 36.8 tons per shift and the sample standard deviation to be 2.8 tons per shift, based upon a random selection of 4 shifts. Construct a 90 per cent confidence interval around this estimate	[5]
Q.4	Describe the different types of qualitative data collection methods. OR Describe the different types of quantitative data collection methods.	[10]
Q.5(a)	What are citations and why is citation used? OR Describe the UGC regulations on the plagiarism.	[5]
Q.5(b)	List 4 most used referencing style with examples. OR Write the following reference in APA, Chicago and AMA referencing system 1.Pu Huang, Gaojin Wen, Zhiming Shang, Chunxiao Zhang, Zhaorong Lin, Jiyou Zhang, "Spectral correlation analysis of chlorophyll-a concentration for inland water", <i>Image and Signal Processing BioMedical Engineering and Informatics (CISP-BMEI) 2017 10th International Congress on</i> , pp. 1-5, 2017.	[5]

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