

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

**CLASS: MSc
BRANCH: GEOINFORMATICS**

**SEMESTER : I
SESSION : MO/2025**

SUBJECT: GI504R1 ADVANCED IMAGE ACQUISITION AND INTERPRETATION FOR ENVIRONMENTAL MAPPING

TIME: 3 Hours

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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		CO	BL
Q.1(a)	Describe the differences between igneous, sedimentary, and metamorphic rocks and write two examples from each.	[5] 1	3
Q.1(b)	Describe the difference between normal fault and reverse fault with suitable diagrams.	[5] 1	3
Q.2(a)	Discuss the differences between the selection key and elimination key with the help of a suitable example.	[5] 2	3
Q.2(b)	Two different LULCs show similar tones and similar textures on the image of a specific spectral band acquired in a particular season. Determine the spectral band and two LULCs. Give suitable reason(s) for your answer.	[5] 2	5
Q.3(a)	Write two U.S. satellite data portals commonly used for remote sensing research and justify which portal you find most suitable for scientific analysis.	[5] 3	2
Q.3(b)	What is the Bhoonidhi portal, and how does it differ from Bhuvan in terms of functionality and user access?	[5] 3	2
Q.4(a)	What does LiDAR stand for? Explain its major applications? Which type of LiDAR sensor is used for underwater or bathymetric mapping?	[5] 4	1
Q.4(b)	What is an Inertial Measurement Unit (IMU)? Explain the function and necessity of each of its components in detail.	[5] 4	3
Q.5(a)	Compare TRMM and GPM satellites in terms of their sensors, coverage, and major applications in hydrological studies. Name any two types of gravimeters.	[5] 5	2
Q.5(b)	Explain how atmospheric sensors contribute to pollution monitoring and weather forecasting.	[5] 5	3

:24/11/2025:E