MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
(A constituent unit of MAHE, Manipal)

SECOND SEMESTER M.TECH (ENVIRONMENTAL ENGINEERING)

END SEMESTER EXAMINATION, APRIL-MAY 2024

PROGRAM ELECTIVE – II

REMOTE SENSING AND GIS IN ENVIRONMENTAL ENGINEERING [CIE- 5415]

(– 05 - 2024)

TIME: 3 HRS. **MAX. MARKS: 50**

Note: 1. Answer all questions.
2. Draw figures wherever relevant.

Q. NO	QUESTION	MARKS	CO	BL
1A	Discuss in detail, the type of scattering responsible for 1. blue color of the sky 2. overcast sky	**5**	**1**	**2**
1B	Distinguish between visual interpretation and Digital Image Processing	**5**	**2**	**2**
2A	What is enhancement? Explain any one method of enhancement	**5**	**3**	**2**
2B	Explain different methods of geometric correction	**5**	**3**	**2**
3A	Explain the different steps in preparing a Land Use Land Cover map	**5**	**3**	**3**
3B	List and explain the disadvantages of Raster and Vector	**5**	**4**	**2**
4A	Discuss the different GIS functions. What is topology building?	**5**	**4**	**2**
4B	What are the different applications of Digital Elevation Model? Explain	**5**	**4**	**2**
5A	Discuss the importance of Global Positioning System (GPS) in Remote sensing and GIS applications	**5**	**4**	**2**
5B	Discuss any one case study in which application of GIS in Environmental Engineering	**5**	**5**	**3**

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Q. NO	QUESTION	MARKS	CO	BL
1A	Explain Absorption in detail	**5**	**1**	**2**
1B	List out the different interpretation keys. How do you distinguish between the following, using visual interpretation technique? i. Industrial area with housing units ii. Lake surrounded with vegetation. iii. Human encroachment of forest	**5**	**2**	**2**
2A	Discuss in detail linear contrast stretch method of enhancement	**5**	**3**	**2**
2B	Explain different methods of radiometric correction	**5**	**3**	**2**
3A	What are the different layers required for baseline data for a Thermal Power station?	**5**	**3**	**3**
3B	Explain the Advantages of Raster and Vector	**5**	**4**	**2**
4A	Explain the following GIS functions in environmental engineering domain: i. Network function ii. Proximity function	**5**	**4**	**2**
4B	What are the different applications of Triangulated Irregular Network? Explain	**5**	**4**	**2**
5A	Write a note on GAGAN	**5**	**4**	**2**
5B	Explain any one case study in which application of GIS in Environmental Engineering	**5**	**5**	**3**