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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATIONS- 2026

B.Tech-8th Semester (ECE)

COURSE CODE (CREDITS):19B1WEC837 (3) MAX MARKS: 25

COURSE NAME: Remote Sensing and Satellite Image Processing

COURSE INSTRUCTOR: Lt. (Dr.) Pragya Gupta MAX. TIME: 1 Hr 30 Min

***Note:*** *(a) All questions are compulsory.*

*(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems*

*(c) Use of a calculator is not allowed*

| Q.No | Question | CO | Marks |
|---|---|---|---|
| Q 1 | (a) Define spatial resolution and explain its significance.<br><br>(b)Imagine that the spatial resolution of the digital remote sensing system is increased from about 80 m to 40 m. List some of the consequences, assuming that image coverage remains the same. What would be some of the consequences of decreasing the detail from 80 m to 160 m? | 3 | 2+3 |
| Q2 | (a) Explain different types of satellite orbits. State the advantages of sun-synchronous orbit.<br><br>(b)Why are more frequent images available for the polar regions as compared to equatorial regions? Explain with a proper diagram. How can more frequent imaging of any particular area of interest be achieved? | 1 | 3+3 |
| Q3 | (a) What is geometric correction? Why is it necessary?<br><br>(b) Explain systematic and non-systematic errors in remote sensing images. | 2 | 3+2 |
| Q4 | (a) Describe the spectral reflectance characteristics of vegetation.<br><br>(b) Define Albedo. Write down the albedo value of the following earth surface feature-<br>(i) Water (ii) Dark Soil (iii) Forest (iv) Concrete | 1 | 2+3 |
| Q5 | (a) Explain different types of scattering in the atmosphere.<br>(b) Differentiate between specular and diffuse reflection. | 1 | 2.5+2.5 |