

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2026

B.Tech-VIII Semester (ECE)

COURSE CODE (CREDITS): 19B1WEC837 (3)

MAX. MARKS: 15

COURSE NAME: Remote Sensing and Satellite Image Processing

COURSE INSTRUCTORS: Lt. Pragya Gupta

MAX. TIME: 1 Hour

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

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

(c) A calculator is not allowed.

Q.No	Question	CO	Marks																																																																
Q1	What are the stages of Remote sensing? Give some of the major advantages and limitations of remote sensing.	CO-1	3																																																																
Q2	Draw and explain the irradiance distribution curves for the Sun and Earth. How is the total radiant existence related to the temperature of the emitting material?	CO-1	3																																																																
Q3.	Give the advantages and disadvantages of space-borne and air-borne remote sensing.	CO-1	3																																																																
Q4	<p>Explain Directional and Non-Directional filters for edge enhancement. Find out the first-order and second-order derivatives of the given pixel values. What information do we get from the first- and second-order derivatives of the given data?</p> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Pixel (x)</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> <th>7</th> <th>8</th> <th>9</th> <th>10</th> <th>11</th> <th>12</th> <th>13</th> <th>14</th> <th>15</th> </tr> </thead> <tbody> <tr> <td>Pixel values (a)</td> <td>50</td> <td>50</td> <td>40</td> <td>30</td> <td>20</td> <td>10</td> <td>10</td> <td>10</td> <td>60</td> <td>10</td> <td>10</td> <td>10</td> <td>50</td> <td>50</td> <td>60</td> </tr> <tr> <td>1<sup>st</sup> Order derivative</td> <td></td> </tr> <tr> <td>2<sup>nd</sup> Order derivative</td> <td></td> </tr> </tbody> </table>	Pixel (x)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Pixel values (a)	50	50	40	30	20	10	10	10	60	10	10	10	50	50	60	1 <sup>st</sup> Order derivative																2 <sup>nd</sup> Order derivative																CO-3	4
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Q5	Write down the relationship for CMY to RGB conversion. What is the difference between CMY and CMYK colour model?	CO-2	2																																																																