

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

**CLASS: M.TECH
BRANCH: REMOTE SENSING**

**SEMESTER : II
SESSION : SP/2023**

SUBJECT: RS512RS1 ADVANCED REMOTE SENSING AND GEOSPATIAL MODELLING

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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	Marks	CO	BL
Q.1(a) What is a multi-look complex image and on what basis the multi-look is applied?	[5]	2	3
Q.1(b) What is a Radar Cross Section and mention the factors that affect the backscattering?	[5]	2	3
Q.2(a) "Uniqueness of any feature is defined by its absorption capability and not its reflection capability". Justify the given statement. Write the spectral range of hyperspectral remote sensing?	[5]	3	3
Q.2(b) Differentiate hyperspectral and optical remote sensing. Give example of any two space based hyperspectral sensors.	[5]	3	3
Q.3(a) What is Variogram? What are the important information we derive using a Variogram?	[3]	4	2
Q.3(b) Make an experimental Variogram using your own 5x5 matrix of values	[4]	1	6
Q.3(c) Give some examples of uncertainty estimation for Additive/Subtractive equations.	[3]	1	4
Q.4(a) Explain different phases of any decision making process defined by Simon.	[3]	4	3
Q.4(b) What are the elements of MCDM technique?	[2]	4	3
Q.4(c) Identify the criteria for finding "suitable site for urban solid waste" and calculate the criteria weights using PCM technique along with its consistency check.	[5]	4	4
Q.5(a) What do you mean by WebGIS?	[2]	5	1,3
Q.5(b) Describe the requisite for WebGIS application development. Give example of any two WebGIS application.	[3]	5	1,3
Q.5(b) Explain the following terminologies: KML, Geoserver, Bhuvan, WMS, WFS	[5]	5	3

:::26/04/2023 E:::