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BTECH
(SEM V) THEORY EXAMINATION 2023-24
GIS AND ADVANCE REMOTE SENSING

TIME: 3 HRS

M.MARKS: 100

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt all questions in brief.

Q no.	Question	Marks	CO
a.	Compare the map and aerial photograph.	2	1
b.	Enumerate the concept of stereoscopy.	2	1
c.	What is FCC image?	2	2
d.	Differentiate between active and passive sensors.	2	2
e.	Discuss various applications of GIS.	2	3
f.	Define map projection.	2	3
g.	Explain interface in a vector data model.	2	4
h.	Compare on-screen digitizing and scanning.	2	4
i.	Explain the key elements of the raster data model	2	5
j.	Discuss data editing in GIS.	2	5

SECTION B

2. Attempt any three of the following:

Q no.	Question	Marks	CO
a.	Derive an expression for the scale of a vertical photograph.	10	1
b.	Explain the interaction mechanism of EM radiation with atmosphere.	10	2
c.	What do you understand by GIS and what are its components? Explain in detail.	10	3
d.	Describe how a vector data model is used to express topology.	10	4
e.	How is new raster data created? Discuss methods for generating raster datasets.	10	5

SECTION C

3. Attempt any one part of the following:

Q no.	Question	Marks	CO
a.	Determine minimum no. of photographs required to cover an area of 15 km x 10 km from following data: i. Size of photographs is 23 cm x 23 cm ii. Scale of photographs 1 cm = 100 m iii. Longitudinal overlap 60% iv. Side lap 30%	10	1
b.	Discuss parallax. Also explain the principle of a parallax bar with a neat sketch.	10	1

4. Attempt any one part of the following:

Q no.	Question	Marks	CO
a.	What do you understand by electromagnetic spectrum? State the wave length regions along with their uses for remote sensing applications.	10	2
b.	What is remote sensing? Write detailed note on applications of remote sensing.	10	2



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5. Attempt any one part of the following:

Q no.	Question	Marks	CO
a.	What is a geographic coordinate system? Explain different types of coordinate systems.	10	3
b.	Explain in detail GIS operations.	10	3

6. Attempt any one part of the following:

Q no.	Question	Marks	CO
a.	What geographic features are represented in the vector data model?	10	4
b.	Explain geo-based data model? Also explain its advantages.	10	4

7. Attempt any one part of the following:

Q no.	Question	Marks	CO
a.	Explain the methods for integrating raster and vector data in GIS. How can these two data models complement each other in spatial analysis?	10	5
b.	Discuss the importance of the source map in raster GIS.	10	5

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