

06CE6153

Reg. No \_\_\_\_\_

Name \_\_\_\_\_

**A P J ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

**M.TECH DEGREE EXAMINATION, DECEMBER 2015**

**FIRST SEMESTER**

**Branch: Civil Engineering**

**Specialization: Environmental Engineering**

**GIS and Remote Sensing for Environmental Applications**

**Time: 3 Hours**

**Max. Marks: 60**

**PART A**

*Answer ALL questions*

1. Compare active and passive remote sensing
2. Explain retrieval algorithms
3. What is Geographic Information System?
4. Describe RDBMS

**(4 x 5 marks = 20 marks)**

**PART B**

5. (a) Discuss radio wave remote sensing. What is SLAR? (4 marks)  
(b) Compare panchromatic, multispectral and hyperspectral data (6 marks)
- OR
6. (a) Discuss the classification of satellites and discuss Indian remote sensing satellites (5 marks)  
(b) Explain spectral signature with reference to water, soil and vegetation (5 marks)
7. (a) Explain different sensor parameters and their importance in remote sensing (7 marks)  
(b) What is thermal imaging? (3 marks)
- OR
8. (a) Discuss various image enhancement techniques (5 marks)  
(b) Compare supervised and unsupervised classification (5 marks)
9. (a) Explain the difference between attribute and spatial data, give examples (6 marks)  
(b) What are the data sources to GIS? (4 marks)

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OR

10. (a) Write a note on importance of Geospatial Technology and discuss its role in Natural Hazards management. (7 marks)  
(b) What is buffer analysis? (3 marks)

11. What is DEM? How is it developed? What are its applications? (10 marks)

OR

12. (a) What is geo referencing? How it is important in overlay analysis? (5 marks)  
(b) What is DGPS? Explain the role of GPS in environmental applications (5 marks)

**(4 x 10 marks =40 marks)**

**E**

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Reg. No \_\_\_\_\_

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**A P J ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

**M.TECH DEGREE EXAMINATION, DECEMBER 2016**

**FIRST SEMESTER**

**Branch: Civil Engineering**

**GIS and Remote Sensing for Environmental Applications**

**Time: 3 Hours**

**Max. Marks: 60**

**PART A**

*Answer ALL questions*

1. Explain the physics of remote sensing
2. What is SLAR?
3. What is a vector data model? Give example
4. What is Digital Elevation Model (DEM)?

**(4 x 5 marks =20 marks)**

**PART B**

5. (a) Compare active and passive remote sensing (4 marks)  
(b) What is spectral signature? What is its use in remote sensing? (6 marks)

OR

6. (a) Briefly describe Swath, IFOV, Nadir, Push broom sensors and whisk broom sensors (5 marks)  
(b) Discuss various types of platforms used for remote sensing (5 marks)
7. (a) Explain False Colour Composite (FCC) (4 marks)  
(b) Discuss the sensor parameters (6 marks)

OR

8. What is image enhancement? explain the methods for image enhancement (10 marks)

9. (a) Explain various components of GIS (6 marks)  
(b) What are various map elements? (4 marks)

OR

10. (a) Spatial data has a significant role in the present world. Discuss (5 marks)  
(b) Explain Relational data base management systems (RDBMS)? (5 marks)
11. (a) What is geo-referencing? Why it is important in GIS applications? (6 marks)  
(b) Describe Global Positioning System (GPS) (4 marks)

OR

12. (a) What are the different analyses possible using GIS? (6 marks)  
(b) What are the different data types (feature classes) in vector data model? (4 marks)

**(4 x 10 marks =40 marks)**



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**A P J ABDUL KALAM TECHNOLOGICAL UNIVERSITY****M.TECH DEGREE EXAMINATION, DECEMBER 2017****FIRST SEMESTER****Branch: Civil Engineering****GIS and Remote Sensing for Environmental Applications****Time: 3 Hours****Max. Marks: 60****PART A***Answer ALL questions*

1. Explain the physics of remote sensing
2. What is False Colour Composite (FCC)?
3. What is a vector data model? Give example
4. Explain overlay analysis

**(4 x 5 marks =20 marks)****PART B**

5. (a) Compare active and passive remote sensing (4 marks)  
(b) Explain various types of remote sensing platforms and their characteristics (6 marks)

OR

6. (a) Compare Push broom sensors and whisk broom sensors (5 marks)  
(b) Explain atmospheric windows. How they are important? (5 marks)
7. (a) Explain spectral signature (5 marks)  
(b) Discuss the sensor parameters (5 marks)

OR

8. What is image enhancement? explain the methods for image enhancement (10 marks)
9. (a) Explain various components of GIS (6 marks)  
(b) What are various map elements? (4 marks)

OR

10. (a) Layers (or levels) are a fundamental means of organizing geographic data in almost all GIS, why? (7 marks)  
(b) What is a shape file? (3 marks)
11. (a) What is geo-referencing? Why it is important in GIS applications? (5 marks)  
(b) What are the applications of GIS in environmental studies? (5 marks)

OR

12. (a) What are the different analyses possible using GIS? (6 marks)  
(b) Describe RDBMS (4 marks)

**(4 x 10 marks =40 marks)**

06CE6153

Exam Slot: E

Reg.Number.....

Name.....

**A P J ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

**M.TECH DEGREE EXAMINATION, DECEMBER 2018**

**FIRST SEMESTER**

**ENVIRONMENTAL ENGINEERING**

**GIS and Remote Sensing for Environmental Applications**

**Time: 3 Hours**

**Maximum Marks: 60**

**PART A**

*Answer ALL questions*

1. What is SLAR?
2. What is BIP format?
3. What is a vector data model? Give example
4. Explain query analysis

**4 x 5 marks =20 marks**

**PART B**

5. (a) Compare active and passive remote sensing (5 marks)
- (b) Discuss various types of platforms used for remote sensing (5 marks)

OR

6. (a) Briefly describe Swath, IFOV, Push broom sensors and whisk broom sensors (6 marks)
- (b) Explain False Colour Composite (FCC) (4 marks)

7. Discuss in detail the classification techniques for satellite imagery (10 marks)

OR

8. Describe elements of visual image interpretation (10 marks)

9. (a) Explain various components of GIS (5 marks)
- (b) What are various map elements? (5 marks)

OR

10. (a) What is datum? give examples for a global datum and local datum (5 marks)



(b) Explain the difference between attribute and spatial data, give examples  
(5 marks)

11. (a) Describe Global Positioning System (GPS) (5 marks)

(b) Spatial data has a significant role in the present world. Discuss (5 marks)

OR

12. Explain the role of GIS and remote sensing in environmental applications  
(10 marks)

**4 x 10 marks =40 marks**