**A** **Reg. No. :** | | | | | | | | | | |

**Question Paper Code: 59171**

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

Open elective

Computer Science and Engineering

15UCE971- REMOTE SENSING AND GIS

(Common to ECE, EEE, EIE, Mechanical, IT, Chemical)

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Remote sensing techniques make use of the properties of-----emitted, reflected or diffracted by the sensed objects CO1- R

   (a) Electric wave (b) Sound waves

   (c) Electromagnetic waves (d) Wind wave

2. The altitude of a Geo-stationary satellite from the earth surface is ……. CO1- R

   (a) 30,000 km (b) 36,000 km (c) 26,000 km (d) 44,000 km

3. Which one is an autonomous body of Govt. of India, is the authority to organize India's satellite programs? CO2- R

   (a) NASA (b) ISRO (c) WHO (d) None of these

4. A scanning system used to collect data over a variety of different wavelength ranges is called CO2- R

   (a) RADAR systems (b) Multispectral scanning

   (c) Microwave sensors (d) Active sensors

5. The arrangement of individual objects in distinctive nature is CO3- R

   (a) Pattern (b) Association (c) Texture (d) Tone

6. --------- of remote sensing imagery involves the identification and measurement of various targets or objects in an image. CO3- R

(a) Data acquisition (b) Interpretation and analysis

(c) Energy interaction (d) None of these

7. By 'spatial data' we mean data that has CO4- R

(a) Complex values (b) Positional values (c) Graphic values (d) Decimal values

8. The graphical representation of the earth features is called CO4- R

(a) Scale (b) Map (c) Projection (d) None of these

9. The most commonly used method of automatic digitizing CO5- R

(a) Manual digitizing (b) Scanning (c) Printing (d) None of above

10. The 'boundary model' is sometimes also called CO5- R

(a) Topological data model (b) Temporal data model

(c) Topological discrete model (d) Temporal discrete model

PART – B (5 x 2= 10Marks)

11. State Stefan-Boltzmann law. . CO1- R

12. Define aerial and space platforms? CO2- U

13. Mention any two satellite data products. CO3- U

14. Write down the different types of projections? CO4- R

15. Define the term digitization? CO5- R

PART – C (5 x 16= 80Marks)

16. (a) Explain the electromagnetic spectrum based on their wavelength with neat sketch. CO1- U (16)

Or

(b) What are significance of spectral reflectance characteristics for soils, water & vegetation? CO1- U (16)

17. (a) Write brief note on Geo-Stationary orbit, Sun-Synchronous and polar orbit. CO2- U (16)

Or

(b) Describe the various types of resolutions of satellite imageries.. CO2- U (16)

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| 18. | (a) | What are the interpretation keys and explain them with examples. | CO3-U | (16) |
| | | Or | | |
| | (b) | Write down the detailed procedure for visual interpretation of satellite image and explain interpretation key characteristics. | CO3-U | (16) |
| 19. | (a) | What are the difference between spatial data and attribute data. | CO4- U | (16) |
| | | Or | | |
| | (b) | Explain the details about different types of Map projection systems. | CO4- U | (16) |
| 20. | (a) | Describe the techniques utilized for raster and vector data compression. | CO5- U | (16) |
| | | Or | | |
| | (b) | How will you improve highway planning with the help of GIS? Explain. | CO5-U | (16) |