17087

BRAINWARE UNIVERSITY

Term End Examination 2024-2025
Programme – B.Tech.(CE)]-2021
Course Name – Remote Sensing & GIS
Course Code - PEC-CE802C
(Semester VIII)

Full Marks : 60 **Time : 2:30 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question) 1 x 15=15

1. *Choose the correct alternative from the following :*

(i) Identify the key principle behind remote sensing.
a) Direct contact measurement b) Electromagnetic radiation
c) Chemical reaction d) Mechanical sensing

(ii) Identify the source of electromagnetic radiation in passive remote sensing.
a) Sun b) Radar
c) Laser d) Artificial satellite

(iii) Select the type of remote sensing that relies on sunlight.
a) Active remote sensing b) Passive remote sensing
c) Radar remote sensing d) Thermal remote sensing

(iv) Choose the satellite sensor used for high-resolution imagery.
a) Landsat b) MODIS
c) LIDAR d) Sentinel-2

(v) Identify the primary function of a remote sensing sensor.
a) Data storage b) Image processing
c) Data acquisition d) Satellite control

(vi) Select the type of remote sensing sensor that uses emitted radiation.
a) Passive b) Active
c) Reflective d) Refractive

(vii) Select the property that differentiates hyperspectral sensors from multispectral sensors.
a) Number of spectral bands b) Spatial resolution
c) Orbit height d) Sensor material

(viii) Choose the correct definition of spectral resolution.
a) Number of pixels in an image b) Number of bands a sensor captures
c) Number of times a satellite revisits an area d) Number of bits used to store data

(ix) Identify the two main types of remote sensing.

a) Active and Passive
b) Optical and Thermal
c) Microwave and Infrared
d) Static and Dynamic

(x) Select the imaging system that captures data in the microwave region.

a) Optical
b) Radar
c) Thermal infrared
d) UV

(xi) Choose the law that governs the total energy emitted by a black body.

a) Kirchhoff's Law
b) Wien's Law
c) Stefan-Boltzmann Law
d) Snell's Law

(xii) Choose the correct term for energy reflected by a surface at specific wavelengths.

a) Spectral radiance
b) Spectral reflectance
c) Spectral transmittance
d) Spectral emissivity

(xiii) Identify the primary objective of flood zoning.

a) Land development
b) Disaster management
c) Urban planning
d) Road construction

(xiv) Select the most effective remote sensing tool for flood mapping.

a) Optical sensor
b) Radar sensor
c) UV sensor
d) Magnetic sensor

(xv) Choose the type of data used in GIS-based hydrological modeling.

a) Spatial data
b) Sound waves
c) Temperature recordings
d) Satellite mass

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Differentiate between active and passive remote sensing. (3)
3. Explain the different types of remote sensing. (3)
4. Illustrate the classification of remote sensing images. (3)
5. Illustrate how remote sensing is used for flood risk assessment. (3)
6. Write about the role of GIS in environmental monitoring. (3)

OR

Write about the applications of remote sensing in urban planning. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Summarize the interaction of electromagnetic radiation with atmospheric gases. (5)
8. Summarize the classification techniques used in remote sensing. (5)
9. Justify the importance of spatial data entry and preparation in GIS. (5)
10. Explain the significance of spatial, spectral, and temporal resolution in remote sensing. (5)
11. Illustrate the steps involved in flood hazard mapping using GIS. (5)
12. Justify the need for different imaging systems in remote sensing. (5)

OR

Justify the significance of radiation principles in remote sensing. (5)

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