

29. a. Elaborate on vector overlay operations with figures. 10 3 4 1,2,5

(OR)

b. Detail on DEM and the parameters which can be derived from DEM. 10 3 4 1,2,5

30. a. With a case study, discuss the role of remote sensing and GIS for flood disaster studies. 10 3 5 1,5,7

(OR)

b. Discuss the significance of Remote Sensing and GIS in geological studies. 10 3 5 1,5,7

Reg. No.

B.Tech. DEGREE EXAMINATION, MAY 2022

Fourth to Seventh Semester

18CEO407T – APPLICATIONS OF REMOTE SENSING AND GIS

(For the candidates admitted from the academic year 2018-2019 to 2019-2020)

Note:

- (i) Part - A should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40th minute.
- (ii) Part - B should be answered in answer booklet.

Time: 2½ Hours

Max. Marks: 75

PART – A (25 × 1 = 25 Marks)

Answer ALL Questions

- | | Marks | BL | CO | PO |
|---|-------|----|----|-----|
| 1. _____ tends to mask the ground signal and acts as a background noise, in the image.
(A) Ground radiance (B) Path radiance
(C) Atmosphere (D) Ozone layer | 1 | 1 | 1 | 2 |
| 2. Which among the following formula, explains the relationship between the wavelength (λ), frequency (γ) and speed of light (C)?
(A) $\gamma = \frac{C}{\lambda}$ (B) $\gamma = \frac{\lambda}{C}$
(C) $\gamma = C \cdot \lambda$ (D) $\lambda = C\gamma$ | 1 | 1 | 1 | 1 |
| 3. The regions of frequency spectrum which are not severely influenced by atmospheric absorption and are useful to remote sensors are called _____.
(A) Visible region (B) Microwave region
(C) Atmospheric windows (D) Thermal region | 1 | 1 | 1 | 1 |
| 4. The portion of the earth seen by a sensor, as the satellite revolves around the earth is called _____.
(A) Spatial resolution (B) Swath
(C) Radiometric resolution (D) Field of view | 1 | 1 | 1 | 1 |
| 5. Which among the parameters does not affect the radar return?
(A) Polarization (B) Dielectric constant
(C) Surface roughness (D) Temperature | 1 | 2 | 1 | 1,2 |
| 6. _____ refers to the spatial arrangement of visibly discernible objects.
(A) Texture (B) Pattern
(C) Tone (D) Shadow | 1 | 1 | 2 | 1 |
| 7. _____ bring an image into registration with a map or another image.
(A) Radiometric correction (B) Atmospheric correction
(C) Geometric correction (D) Dark object correction | 1 | 2 | 2 | 1,2 |

8. The process of suppressing certain frequencies and emphasizing other frequencies is called _____.
 (A) Spatial filtering (B) Band rationing
 (C) Image fusion (D) Image merging
9. How many number of pixels of training data to be collected from a data with N bands for classification?
 (A) 10 N (B) > 10 N
 (C) < 10 N (D) N – 1
10. Water have absorption in which wave length region?
 (A) Near infrared (B) Short wave infrared
 (C) Visible (D) Red
11. The art and science of graphically representing a geographical area is called _____.
 (A) Geographic information system (B) Photogrammetry
 (C) Cartography (D) Remote sensing
12. Indian political map is an example for _____ type of map.
 (A) Topographical (B) Navigational
 (C) General reference (D) Cadastral map
13. The line of zero latitude is called _____.
 (A) Prime meridian (B) Parallel
 (C) Meridian (D) Equator
14. Shape file is a _____ type of data format.
 (A) Raster (B) Vector
 (C) Grid (D) Cell
15. Sliver is a type of _____.
 (A) Data format (B) Vector data
 (C) Topological error (D) Spatial data
16. In _____ system the earth is divided into 60 zones.
 (A) Geographic coordinate (B) Rectangular coordinate
 (C) Polar coordinate (D) Universal Transverse Mercator
17. _____ is a request to select features or records from a database.
 (A) Query (B) Feature class
 (C) Non spatial data (D) Feature dataset
18. _____ interpolation method, offers assessment of prediction errors with estimated variances.
 (A) Deterministic (B) Exact
 (C) Inexact (D) Stochastic
19. _____ captures the natural and built features on the earth surface.
 (A) Digital terrain model (B) Digital surface model
 (C) Contour (D) 3D model

20. The process of taking input cell values and replacing them with new output cell values is called _____.
 (A) Overlay (B) Interpolation
 (C) Classification (D) Reclassification
21. Igneous rock can be identifies from satellite data based on _____.
 (A) Hardness (B) Presence of layers
 (C) Joint pattern (D) Softness
22. Which is not a type of urban development based on social understanding?
 (A) High income group (B) Medium income group
 (C) Village (D) Squatter
23. Volcanic landforms in satellite data are characteristics of _____ rock.
 (A) Sedimentary (B) Metamorphic
 (C) Soft rock (D) Igneous
24. In microwave data flooded area appears as _____.
 (A) Dark (B) White
 (C) Blue (D) Bright
25. Which type of data is required for regional level disaster mapping?
 (A) Coarse spatial resolution (B) Medium spatial resolution
 (C) Fine spatial resolution (D) High spatial resolution

PART – B (5 × 10 = 50 Marks)

Answer ALL Questions

Marks BL CO PO

26. a. Illustrate on
 (i) Electromagnetic spectrum
 (ii) Interaction of electro magnetic spectrum with atmosphere
- (OR)
- b. Explain
 (i) Sensor resolutions
 (ii) Multispectral and hyper spectral remote sensing
27. a. Elaborate on elements of interpretation.
- (OR)
- b. Describe the point and local operations in image enhancement.
28. a. Discuss on
 (i) Components of GIS
 (ii) Universal Transverse Mercator System
- (OR)
- b. Describe the raster data structure with neat sketches.