





11. What is the approximate flattening of the earth?
  - a. 1:300
  - b. 1:198
  - c. 1:288
  - d. 1:498
12. To which category does the UTM Projection system belong?
  - a. Geographic
  - b. 3-D
  - c. Projected Planar
  - d. Non-geographic
13. Which one the following data source is appropriate for flood mapping?
  - a. LISS-III
  - b. LISS-IV
  - c. RADAR
  - d. LiDAR
14. To which category does TIN data structure belong?
  - a. Vector
  - b. Raster
  - c. Polygon Area Node
  - d. Grids
15. Which of the following extension modules of ArcGIS helps in watershed analysis?
  - a. 3-D Analyst
  - b. Geostatistical Analyst
  - c. Network Analyst
  - d. 3-D, Spatial Analyst and ArcHydro
16. What is the science that deals with shape and size of the earth?
  - a. Geography
  - b. Earth Science
  - c. Cartography
  - d. Geodesy
17. What is RMS error in georeferencing?
  - a. Error of displacement of map coordinates.
  - b. Error of displacement of GCP.
  - c. Error of displacement of map coordinates and GCP.
  - d. Error in digitization.
18. What is the advantage of topological spatial data?
  - a. Geometry is maintained nicely.
  - b. Area is maintained.
  - c. Direction is maintained by the objects.
  - d. Linkage is maintained even after deformation.
19. There 1000 pixels of 10 m spatial resolution in an image. What is the area covered by the image?
  - a. 100 hectares
  - b. 10 hectares
  - c. 1 hectares
  - d. 10,000 sq m
20. In which aspect Network Analysis in GIS will help us?
  - a. To find out direction of movement.
  - b. To find the shortest path of movement.
  - c. To estimate least cost of transportation.
  - d. All of the above.

**( PART-B : Descriptive )**

**Time : 2 hrs. 40 min.**

**Marks : 50**

[ Answer question no.1 & any four (4) from the rest ]

1. Discuss the advantages of a DEM/DTM. 10
2. a. Define photogrammetry. What are the generations of photogrammetry? 5+5=10  
 b. What are the sources of distortions and displacement? Write a brief about relief displacement.
3. a. What is digital image classification? Differentiate between different types of classification. 7+3=10  
 b. Why accuracy assessment is done on classified images.
4. a. What is digital image processing? Why it is done? 4+6=10  
 b. What is radiometric and geometric correction? Write a short note on types of image enhancement technique.
5. a. What is geoid? How does it differ from an ellipsoid? 2+3+5=10  
 b. Define flattening of the earth. Derive an expression for it.
6. a. What are the various kinds of errors in GIS? 3+3+4=10  
 b. Can you create a perfect map in GIS? Justify your answer.
7. a. What are the application areas of GIS? 4+6=10  
 b. Discuss an application area of GIS with reference to data base requirements and societal benefits.
8. Write a short note on: (*any two*) 5+5=10
  - a. LIDAR technology and its components.
  - b. Spatial data.
  - c. Cartographic capability of GIS.

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