

**MA/ M.Sc. GEOGRAPHY
FOURTH SEMESTER
GEOINFORMATICS: PRINCIPLES &
TECHNIQUES OF GIS
MGE – 402C
[USE OMR FOR OBJECTIVE PART]**

**SET
A**

Duration: 3 hrs.

Full Marks: 70

(Objective)

Time: 30 min.

Marks: 20

Choose the correct answer from the following:

1X20=20

- A value applied to the origin of a coordinate system to change the y-coordinate readings.
 - False northing
 - False tasting
 - Both a and b
 - None of the above
- Geographic coordinates that are based on a spheroid are _____.
 - Quadratic system
 - Geodetic coordinates
 - Vector data
 - Raster data
- The Cartesian system is also called _____.
 - Circular coordinate system
 - Rectangular coordinate system
 - Spherical coordinate system
 - Space coordinate system
- _____ Coordinate Systems are used to locate data on the Earth's surface in a 3D space.
 - Planar
 - Global
 - Local
 - Parallel
- Geoid is used to describe _____.
 - Heights
 - Width
 - Ranges
 - Weights
- Which type of DEM data is provided by Carto DEM?
 - Digital Surface Model
 - Digital Terrain Model
 - Both (a) & (b)
 - none
- Which type of network is formed when connection exists between the source node and the destination node?
 - Planner network
 - Non-planner network
 - Directional network
 - Both (a) & (b)
- Digital Terrain Model can be generated from
 - DEM data
 - Contours
 - Ground Control Points
 - All the above

9. IDW belongs to which category of interpretation tool?
 - a. Geostatistical model
 - b. Deterministic model
 - c. Linear model
 - d. None of the above
10. Digital Terrain Elevation Data has been provided by
 - a. NASA
 - b. NOAA
 - c. NIMA
 - d. USGS
11. Which index is commonly known as 'average distance per tone'?
 - a. Alpha index
 - b. Pi index
 - c. Iota index
 - d. Gamma index
12. Which of the following element does not contain any attribute in a network?
 - a. Stop
 - b. Block
 - c. Node
 - d. Turn
13. Which type of kriging assumes that μ is an unknown constant in $I(s) = \mu + \varepsilon(s)$?
 - a. Indicator kriging
 - b. Universal kriging
 - c. Probability kriging
 - d. Simple kriging
14. Finding most efficient path to a series of locations is known as
 - a. TOUR
 - b. PATH
 - c. TRACING
 - d. ALLOCATION
15. Which of the following is not a Problem in GIS Network Analysis?
 - a. Shortest path
 - b. Postman
 - c. Maximum flow
 - d. Maximum spanning
16. Reclassification is conversion of raw image into _____ image
 - a. Color
 - b. Gray
 - c. Boolean
 - d. Spatial
17. Second layer of buffering is called as _____ buffering
 - a. Point
 - b. Line
 - c. Area
 - d. Doughnut
18. Dissolve operation combines boundaries based on _____
 - a. Dimensions
 - b. Features
 - c. Relevant attributes
 - d. Original attributes
19. The main types of vector overlay are _____
 - a. Point-in-polygon
 - b. Line-in-polygon
 - c. Polygon-in-polygon
 - d. All of the above
20. The editing function allows the user to _____ points, lines, polygons and change the attributes of these features.
 - a. Multiply
 - b. Add
 - c. Delete
 - d. Both c and b

(Descriptive)

Time : 2 hrs. 30 mins.

Marks : 50

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

1. Define Geodesy and mention its applications. Describe the shape of the earth with the help of ellipsoid-geoid model. 5+5=10
2. Why is data editing important? What methods are available for detecting and rectifying errors in GIS. 3+7=10
3. What is topology? Elaborately explain different types of topological relationship of vector data. 1+9=10
4. What do you mean by interpolation in GIS? Write about any one type of interpolation and its uses. What are different types of network in GIS? Give suitable diagram in support of your answer. 2+4+4=10
5. Write short notes on: 5+5=10
 - a. Buffering in vector analysis with example
 - b. Advantages and disadvantages of Web GIS.
6. What is DBMS? What are different type of database system? What is SQL? What are different types of SQL statements? 2+3+2+3=10
7. Discuss the following topological analysis of vector data with examples. 5+5=10
 - a. Reclassification
 - b. Overlay of point on polygon and overlay of line on polygon
8. Write short notes on: 5+5=10
 - a. Structure models of DEM
 - b. Types of Network models

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