DO NOT BREAK THE SEAL OF THE BOOKLET UNTIL YOU ARE TOLD TO DO SO

QUESTION BOOKLET   SERIES I

Subject : GIS/GIS Software(Freeware & Commercial GIS Software)

BOOKLET SERIAL NO. 100049   Marks : 200

Read the following instructions carefully before you begin to answer the questions.

INSTRUCTIONS TO CANDIDATES

1. This booklet contains **100 questions** to be answered in a separate OMR Answer Sheet using Black Ball Pen in the following :

   Part-A-GIS/GIS Software(Freeware & Commercial GIS Software :100 questions.

2. All Questions are compulsory.

3. You will be supplied the Answer sheet separately by the invigilator. You must complete the details of particulars asked for.

4. Answers must be shown by completely blackening the corresponding circles in the Answer Sheet against the relevant question number by Black Ball Pen. OMR Answer Sheet without marking series/ double series marking shall not be evaluated.

Example :

   Supposing the following question is asked :-

   The Capital of Meghalaya is-
   A. Guwahati
   B. Kohima
   C. Shillong
   D. Delhi

You will have four alternatives in the Answer Sheet for your response corresponding to each question of the Question Booklet as below :-

Ⓐ Ⓑ Ⓒ Ⓓ

In the above illustration, if your chosen response is alternative C i.e. Shillong, then the same should be marked on the Answer Sheet by blackening the relevant circle with a Black Ball Point Pen only as below :-

Ⓐ Ⓑ ⬤ Ⓓ

WHICH IS THE ONLY CORRECT METHOD OF ANSWERING :

5. Answer the questions as quickly and as carefully as you can. Some questions may be difficult and others easy. Do not spend too much time on any one question.

6. There will NOT be any negative marking for wrong answers.

7. The Answer Sheet must be handed over to the invigilator before you leave the Examination Hall.

8. No rough work is to be done on the Answer Sheet. Space for rough work has been provided in the question booklet.

Part - A -GIS/GIS Software(Freeware & Commercial GIS Software)

Marks :200

Each Question carries 2 marks:

1. In QGIS software where vector/raster datasets can be displayed is known as _____.
a) Browser Panel   b) Map Canvas
c) Display Bar   d) Side Toolbar

2. Which of the following dataset is/are not vector data?
a) Satellite Images   b) Point Data
c) Polygon Data   d) Line Data

3. In QGIS, symbology of a layer can be changed using _____.
a) Status Bar   b) Side Toolbar
c) Map Canvas   d) Layer Properties

4. Which one of these is not considered as basic elements of a map?
a) Scale
b) Colors
c) Legend
d) Direction (North Arrow)

5. In GIS (Select correct statement),
a) Only one layer can be opened at a time
b) Only two layers can be opened at a time
c) Only three layers can be opened at a time
d) Mutiple layers can be opened together

6. To run a query in GIS,
a) Only Vector data can be used
b) Only Raster data can be used
c) Only polygon layers can be used
d) Both Raster and vector datasets can be used together

7. Feature information associated with vector data are called _____
a) Data   b) Information
c) Attributes   d) Metadata

8. Which window in ArcMap enables a user to locate, retrieve and save data into a directory of his choice?
a) Catalog Window
b) Table of Contents Window
c) Search Window
d) ArcTool Box

9. Which of the following is not a commonly used resampling technique for satellite datasets?
a) Cubic Convolution
b) Parabolic Convolution
c) Bilinear Interpolation
d) Nearest Neighbor Technique

10. Which of the following is not a valid vector data type?
a) Polyline   b) Polygon
c) Point   d) Pyramid

11. Red color in a standard false color composite image indicates:
a) Vegetation   b) Settlement
c) Water Body   d) Roads

12. OGC resfers to:
a) Open Geospatial Consortium
b) Open GIS Consortium
c) Open GIS Committee
d) Open Geospatial Committee

13. Which of the following is not a freeware?
a) Quantum GIS   b) GRASS GIS
c) SAGA GIS   d) ArcGIS

14. GRASS refers to:
a) Geodetic Resource Analysis and Spatial System
b) Geographic Resource Analysis Support System
c) Geographic River Analysis and Spatial System
d) Global Resource Analysis and Support System

15. Which of the following does not indicate topological characteristics of a vector?
a) Adjacency
b) Continuity
c) Containment
d) Digitization

16. Information in GIS is entered and stored as
a) Panels
b) Layers
c) Single Panel
d) Dual Panel

17. Which of these is a projected coordinated system?
a) UTM
b) WGS 1984
c) ITRF 2000
d) NAD 1983

18. By 'spatial data' we mean data that has
a) Complex values
b) Positional values
c) Graphic values
d) Decimal values

19. What is 'Metadata'?
a) It is 'data about data'
b) It is 'meteorological data'
c) It is 'oceanic data'
d) It is 'contour data'

20. Interpolation is based on the principle of:
a) Spatial Auto-correlation
b) Spatial Auto-correction
c) Thematic Auto-correlation
d) Thematic Correction

21. What does TIN stand for?
a) Traffic Internet Network
b) Temporal Interest Network
c) Triangulated Irregular Network
d) Temperature Interface Node

22. Which of the following is not true about DBMS?
a) A DBMS provides a high-level, 'declaration query language'
b) A DBMS supports the use of a 'data model'
c) A DBMS includes 'data backup' and 'recovery' functions to ensure data availability at all times
d) A DBMS does not allow the control of 'data redundancy'

23. GDAL refers to:
a) Geospatial Data Acquisition Laboratory
b) Geospatial Data Abstraction Library
c) Geospatial Data Abstraction Laboratory
d) Geographic Data Analysis Laboratory

24. Which of the following is not commonly seen in a map layout?
a) North Arrow
b) Legend
c) Scale
d) Resolution

25. Which of the following does not represent a type of database?
a) Hierarchical
b) Relational
c) Tabular
d) Object-oriented

26. Creation of polygons around input features at a specified distance is called:
a) Buffer
b) Area
c) Coverage
d) Topology

27. ".img" is a native file format of which of the following software?
a) ArcGIS
b) QGIS
c) Erdas Imagine
d) SatScan

28. Which of the following renders a 3D representation of the Earth based on satellite imagery?
a) Erdas Imagine
b) Google Maps
c) Google Earth
d) QGIS

29. Which of the following is true for GIS?
a) GIS and CAD are synonymous
b) Aerial photographs are preferred over satellite images in a GIS environment
c) Tabular data can only be an input for GIS.
d) Tabular data can be both an input and output for GIS

30. Which of the following is not a map manipulation technique?
a) Erase
b) Intersect
c) Merge
d) Join and Relate

31. The process of converting data from analog to digital format in a GIS environment is called:

a) Digitization   b) Conversion
c) Photo Capture   d) Feature Extraction

32. Which of the following is not true about a feature class?
a) it can be either a point, line or a polygon.
b) it can be a raster.
c) It follows the projection system of the feature dataset.
d) It is generally created within a geodatabase.

33. Which of the following is not a class interval system for choropleth mapping?
a) Percentiles   b) Quartiles
c) User defined   d) Extremities

34. What is a linked display?
a) A set of maps opened in the same display
b) A set of maps which are linked in separate display
c) A set of linked tables displayed in an RDBMS
d) The place where data is visible when it is added

35. Which of the following is a non-cartographic output?
a) GPS coordinate plots
b) Thematic maps
c) Toposheets
d) Charts and Tables

36. Which of the following is not a characteristic of an SDSS?
a) They incorporate spatially explicit models.
b) They are designed to make full use of available data
c) They are designed to handle spatial data only.
d) They are easy to use.

37. Which of the following is not an Overlay analysis tool?
a) Merge   b) Intersect
c) Clip   d) Erase

38. Which of the following is not employed while analyzing space-time data using SatScan?
a) Poisson-based model
b) Bernoulli model
c) Space-Time permutation model
d) Kriging

39. Which of the following software's tools is exclusively programmed in C#?
a) Map Window GIS
b) QGIS
c) ArcGIS
d) GRASS GIS

40. What do you mean by SAGA?
a) System for Automated Geographic Analyses
b) System for Automated Geoscientific Analyses
c) System for Automated Geospatial Analyses
d) System for Automated Geological Analyses

41. Which of the following is not a standard filter module for grids in SAGA GIS?
a) Gaussian filter
b) Roberts filter
c) Laplacian filter
d) Multi-directional Lee filter

42. What is the process of assigning real world coordinates to an image called?
a) Assignment
b) Editing
c) Georeferencing
d) Geospatial Analysis

43. Which of the following ArcGIS tools is not a spatial analyst tool?
a) Extract by Mask   b) Fuzzy Overlay
c) Raster Calculator   d) Mosaic Dataset

44. Which of the following is not a type of spatial data?
a) Census data   b) Satellite Image
c) District Boundary   d) Road Network

45. Which of the following parameter does not get modified when Electromagnetic Radiation interacts with the Earth's atmosphere,
a) Speed
b) Intensity
c) Direction
d) Atmospheric Gases

46. A digital elevation model is a:
a) Raster data model
b) Vector data model
c) Non-spatial data model
d) None of the above

47. In SAGA, any satellite data can be visualized in 3D using
a) Landsat-8 data
b) ASTER data
c) Vector data
d) Digital elevation data

48. When editing a features in GIS environment, which of the following attribute does not get updated automatically.
a) Length   b) Height
c) Area   d) Location

49. GPX is a file type associated with
a) Google Earth   b) ArcGIS
c) Satellite Data d) GPS

50. Keyhole Markup Language (KML) is the data format used to display _____ in web-based mapping applications.
a) Camera data   b) Sensor data
c) Tabular data   d) Geographic data

51. SHP file format is used to store and display_____.
a) Camera data   b) Vector data
c) Sensor data   d) Tabular data

52. _____ data represents the earth's surface as cells or pixels.
a) Raster data   b) Vector data
c) Tabular data   d) Point data

53. _____ is used to locate or identify

any location on the earth's surface by a unique set of numbers.
a) Datum system   b) Grid system
c) Point system   d) Coordinate system

54. The _____ system divides the world into grid zones.
a) UTM
b) Polyconic
c) Stereographic
d) Lambert conformal conic

55. Digital elevation model contains_____ as their digital numbers (pixel values).
a) Latitude values
b) Longitude values
c) Latitude and Longitude values
d) Z-values

56. Same analysis performed in two different standard GIS software packages,_____.
a) Should give the same results
b) Will give different results
c) Should give comparable results
d) None of these

57. Which of the following factor does not influence the success of GIS in a decision support system?
a) Analyst's experience
b) Used GIS technique
c) Accuracy of input layers/data
d) Cost of the GIS software

58. Confusion matrix is useful in _____.
a) Matrix classification
b) Error estimation
c) Matrix manipulation
d) Matrix correction

59. Which of the following cannot be viewed using Google Earth?
a) The Earth   b) The Moon
c) The Star   d) Underwater

60. How does street view pictures have been made by Google Earth?
a) By using satellite images

b) By driving everywhere with a car
c) By 3D aerial photography
d) By 3D model provided by public users

61. Any specific feature identified in Google Earth can be digitized and exported to ArcGIS in _____ file format.
a) IMG
b) GEOTIFF
c) JPEG
d) KML

62. _____ is the best suited projection system for India.
a) Polyconic
b) UTM
c) Stereographic
d) Lambert conformal conic

63. The following are electromagnetic waves, except
a) Infrared Waves
b) Gamma Waves
c) Sound Waves
d) Radio Waves

64. Electromagnetic radiation:
a) Once generated, remains self-propagating
b) Produces a time varying magnetic field and vice-versa
c) Is capable to travel across space
d) All of these

65. Which of the following has the longest wavelength?
a) X-Rays
b) Gamma Rays
c) SWIR
d) Radio waves

66. Select an appropriate spatial function from the list (ArcGIS) to remove the un-wanted vegetation class (polygon) from a feature (landuse/landcover vector data) in the output.
a) Buffer
b) Overlay
c) Erase
d) Identity

67. Select an appropriate spatial function from the list to update and generalize the existing feature /database with additional information.
a) Buffer
b) Update Overlay
c) Erase
d) Identity

68. _____ Earth Models can be used for accurate range and bearing calculations over long distances.
a) Spherical
b) Ellipsoid
c) Both of these
d) None of these

69. Which of the following projections system preserve area, shape, direction and distance during coordinate transformation?
a) Orthographic Projection
b) Cylindrical Projection
c) Conical Projection
d) None of these

70. The spatial resolutions of freely available SRTM DEM are.
a) 10cm and 25cm
b) 30cm and 90cm
c) 10m and 25m
d) 30m and 90m

71. The science of map-making is known as _____
a) Cartography
b) Geography
c) Coordinate Systems
d) Geology

72. What does GPS stand for?
a) Geographic Positioning Standard
b) Global Positioning Systems
c) Global Projection Standards
d) Geological Projection Systems

73. How do you store numbers in a computer?
a) ASCII
b) Binary
c) Both (a) and (b)
d) None of these

74. What are data models in GIS?
a) A concept to represent tabular data in desktop
b) A concept to represent real world features
c) A concept to represent spatial data into folders
d) A concept to represent point data as polygon

75. What are the 3 basic data models in GIS?
a) Binary, Raster, and Vector
b) Vector, Map, Attribute

c) ASCII, Point, Raster
d) Raster, Vector and Attribute

76. _____ is the main disadvantage of Vector data
a) Difficulties in representing continuous features
b) Difficulties in representing discrete features
c) Difficulties in representing linear features
d) Difficulties in representing circular features

77. Which of the following cannot be estimated/derived using Digital Elevation Model (DEM) ?
a) Slope
b) Aspect
c) Depth of a river
d) Drainage network

78. Table join can be explained as,
a) It includes only attributes from both tables and allows only to run query
b) It includes only spatial data to run query
c) It includes all spatial data and attributes from both tables and allows to run a spatial query
d) None of these

79. $\dfrac{(NIR - \mathrm{Re}d)}{(NIR + \mathrm{Re}d)}$ is the expression for ____.

a) Leaf water Content Index
b) Normalised Difference Vegetation Index
c) Soil-Adjusted Vegetation Index
d) Moisture Stress Index

80. _____ is raster to vector conversion.
a) Vectorization
b) Scanning
c) Xerox
d) None of these

81. ArcMap cannot be used for _____
a) View satellite image
b) Edit vector
c) Prepare image layout
d) Capture satellite image

82. AcrCatalog is developed for _____
a) Design geodatabase
b) Maintain geodatabase
c) Both (a) and (b)
d) None of these

83. ArcToolbox is dedicated to
a) Data analysis
b) Data capture
c) Design geodatabase
d) Maintain geodatabase

84. _____ are start and end point of line.
a) Polygons
b) Pyramid
c) Nodes
d) None of these

85. Lines are _____
a) 2D feature
b) 1D feature
c) 3D feature
d) None of these

86. Polygons are _____
a) 2D feature
b) 1D feature
c) 3D feature
d) None of these

87. When 1cm on the map represents 50000cm on the groud, scale will be _____
a) 1:500000
b) 1:500
c) 1:5000
d) 1:50000

88. _____ is used for the detailed and accurate representation of cultural and natural features of the ground.
a) Planimetric Maps
b) Topographic Maps
c) Thematic Maps
d) Chorographic Maps

89. Which of the following is not an essential part of a GIS?
a) A smartphone
b) Computer hardware
c) A digital map
d) A geographical database

90. Topographic maps developed by Survey of India is based on _____ system.
a) The International
b) The IAC
c) Both of these
d) None of these

91. _____ is one example of 1:50,000 topographic sheets developed by Survey of India.
a) 52
b) 52K
c) 52K/16
d) 52K/SE

92. Maps offer abstract representations (models) of reality that are _____, _____ and _____.
a) Complex, classified and symbolized
b) Simplified, classified and symbolized
c) Both of these
d) None of these

93. _____ is the equipotential surface of the earth's gravity field which would coincide with the ocean surface.
a) Projection   b) Topography
c) GEIOD   d) Ellipsoid

94. Which of the following properties of a vector layer is not essential to use it in GIS environment?
a) Colour and texture
b) Projection system
c) Associated attributes
d) Datum

95. Which of the following map elements plays vital role while estimating the area of any given feature?
a) Colour
b) Texture
c) Scale Bar

d) Direction (North Arrow)
96. Which of the following file associated with ARCGIS shape file contains the attribute table?
a) .prj   b) .dbf
c) .sbn   d) .sbx

97. Which of the following file format preserve georeferencing information with image?
a) JPEG   b) GIF
c) BMP   d) GeoTIFF

98. In a True Colour Composite map generated using multispectral images, vegetation will appear in_____colour.
a) Blue   b) Green
c) Red   d) Black

99. Which of the following is not the advantage of DBMS?
a) Redundancy is controlled with integrity
b) Unauthorized access is restricted
c) Providing multiple user interfaces
d) All of these

100. Which of the following band combinations is used to display satellite images in Standard False Color Composite (FCC)?

	Wavelength band (Satellite Image)	Colour of a display system (Monitor)
a)	Green wavelength band Red wavelength band NIR wavelength band	Blue Colour Green Colour Red Colour
b)	Blue wavelength band Green wavelength band Red wavelength band	Blue Colour Green Colour Red Colour
c)	Green wavelength band Red wavelength band Blue wavelength band	Blue Colour Green Colour Red Colour
d)	Infrared-Red wavelength band Green wavelength band Blue wavelength band	Blue Colour Green Colour Red Colour