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NPTEL

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Courses » Digital elevation models and applications

Announcements Course Ask a Question Progress Mentor

Unit 2 - Week-1

Course outline

How to access the portal

Week-1

- Concept of Digital Elevation Model and How It Is Represented
- Various Techniques to Generate Digital Elevation Model-1
- Various Techniques to Generate Digital Elevation Model-2
- Various Techniques to Generate Digital Elevation Model-3
- Importance of Spatial Resolution With DEMs
- Quiz : Assignment: Week 1
- Feedback Week-1
- Answer Key

Week-2

Week-3

Week-4

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Assignment: Week 1

The due date for submitting this assignment has passed. **Due on 2018-02-21, 23:59 IST.**

Submitted assignment

1) Which of the following cannot be modelled using a DEM? 1 point

- Slope
- Aspect
- Geology
- Runoff

No, the answer is incorrect.

Score: 0

Accepted Answers:

Geology

2) The rate of change of elevation is called: 1 point

- Gradient
- Slope
- Aspect
- Gradient Slope

No, the answer is incorrect.

Score: 0

Accepted Answers:

Slope

3) Resolution may best be defined as: 1 point

- The accuracy and precision of the data
- The overall quality of a dataset
- The smallest feature that can be mapped or measured
- The smallest unit or measurement into which data can be disaggregated

No, the answer is incorrect.

Score: 0

Accepted Answers:

The smallest feature that can be mapped or measured

4) What is the difference between slope and aspect? 1 point

- Slope is the distance down the fall line from the top of the slope to its bottom, while aspect is the percentage gradient of this line averaged over its full distance.
- Slope is the gradient directly down the fall line, while aspect is the direction of the fall line relative to north.
- Slope is the direction of the fall line, while aspect is the gradient of the fall line.

- Slope is the gradient of the fall line relative to vertical, while aspect is the direction of the fall line relative to the line of greatest slope.

No, the answer is incorrect.

Score: 0

Accepted Answers:

Slope is the gradient directly down the fall line, while aspect is the direction of the fall line relative to north.

5) Slope can be calculated from the formula $S = b^2 - c^2$ **1 point**

- True
 False

No, the answer is incorrect.

Score: 0

Accepted Answers:

True

6) What is a model? **1 point**

- A model is a simplified representation of reality
 A model is a method for storing spatial data
 A model is a suite of computer programs
 A model is a set of instructions to a GIS

No, the answer is incorrect.

Score: 0

Accepted Answers:

A model is a simplified representation of reality

7) What is meant by the term 'precision'? **1 point**

- The extent to which a value approaches its true value
 The lack of bias in the data
 The level of detail at which data is stored
 The overall quality of the data

No, the answer is incorrect.

Score: 0

Accepted Answers:

The level of detail at which data is stored

8) What is meant by the term 'data quality'? **1 point**

- The lineage of the data
 The generalization present in the source data
 The resolution of the data
 The inherent quality of the data as characterized by its accuracy, precision, bias, level of error, etc.

No, the answer is incorrect.

Score: 0

Accepted Answers:

The inherent quality of the data as characterized by its accuracy, precision, bias, level of error, etc.

9) What is positional error? **1 point**

- Error due to incorrect labelling or quantification of features
 Error associated with displacement of the object from its true location
 Error in the source document due to cartographic bias
 Error due to imprecision in coordinate registration

No, the answer is incorrect.

Score: 0

Accepted Answers:

Error associated with displacement of the object from its true location

10) A pixel with 1m spatial resolution covers an area of 1m². How much area a cell with 0.1m spatial resolution in a DEM would cover? **1 point**

- 0.1m²
- 0.001m²
- 100cm²
- 10cm²

No, the answer is incorrect.

Score: 0

Accepted Answers:

100cm²

11) DEMs can be prepared from:

1 point

- Raster stereo pair
- Contours
- InSAR technique
- All of above

No, the answer is incorrect.

Score: 0

Accepted Answers:

All of above

12) A DEM can have:

1 point

- No attribute
- Single attribute
- Two attributes
- Multiple attributes

No, the answer is incorrect.

Score: 0

Accepted Answers:

Single attribute

13) The shape of unit of DEM can only be:

1 point

- Rectangular
- Circular
- Square
- Triangle

No, the answer is incorrect.

Score: 0

Accepted Answers:

Square

14) The cell value of a DEM can have:

1 point

- Both positive and negative, integer and real values
- Only positive integer values
- Only negative integer and real values
- Only positive real values

No, the answer is incorrect.

Score: 0

Accepted Answers:

Both positive and negative, integer and real values

15) Which data model requires less space for computer storage?

1 point

- Raster
- TIN
- Vector
- None of above

No, the answer is incorrect.

Score: 0

Accepted Answers:

Vector

16) How many attributes, a unit of DEM can have?

1 point

- 1
- 2
- 3
- Infinite

No, the answer is incorrect.

Score: 0

Accepted Answers:

1

17) Spatial interpolation is the procedure of estimating the value of properties at:

1 point

- Observational location
- Sample sites
- Un-sample sites
- None of the above

No, the answer is incorrect.

Score: 0

Accepted Answers:

Un-sample sites

18) Exact methods of point-based interpolation is also known as:

1 point

- Spline method
- Inverse Distance Weighted method
- Kriging method
- Thiessen polygons method

No, the answer is incorrect.

Score: 0

Accepted Answers:

Thiessen polygons method

19) A barrier is a dataset used as a break line that limits the search for input sample points.

1 point

- Point
- Polyline
- Polygon
- Pixel

No, the answer is incorrect.

Score: 0

Accepted Answers:

Polyline

20) Digital elevation model is _____ data model:

1 point

- Raster
- Vector
- TIN

Vector and TIN

No, the answer is incorrect.

Score: 0

Accepted Answers:

Raster

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