

1. BASIC CONCEPTS AND TERMINOLOGY

1.1 Use any real world example and explain the importance of spatial information in our everyday lives

EXAMPLE – not general description

(3)

1.2 Explain the difference between spatial and attribute data.

Spatial data – location on earth

Attribute data – describes spatial data

(2)

1.3 Name the 5 functions that GIS software should be able to perform

Data entry

Editing

Data Management

Analysis Output

(5)

2. DEFINE THE INFORMATION PRODUCT

Scenario: A developer wants to find a property for the development of a new 5 star hotel in Durban. This new hotel must be within walking distance from the beach, close to cinemas and a shopping centre. The area of the property must be at least one hectare and further than 5 km from any other 5 star hotel.

2.1 Based on the above scenario define a research question and 4 decision criteria for the use in a GIS.

Research question – form of a question ending with a **?**.

Criteria – must be specific. Do not use words like ‘distance from’ or ‘walking distance’

EXAMPLE (more than one correct answer):

Where is the best location for the development of a new 5 star hotel?

Best location for the development of a new hotel is where the following conditions are met:

1. Must be within 400 meter from the beach.
2. Must be within 1 km from cinemas and a shopping centre.
3. The area of the property must be at least 1 ha.
4. Must be further than 5 km from any other 5 star hotel.

(5)

2.2 Make a list of spatial and attribute data needed for the GIS project.

Must be based on research question and criteria. More than one correct answer.

Spatial Data	Attribute Data
Properties	land use (hotels, cinemas, shopping centres) Area
Coastline	Unique ID

(6)

3. DESIGN THE GIS MODEL OF REALITY

3.1 Explain the differences between longitudes and latitudes and how it is used to describe the location of entities on earth.

Longitudes (Meridians): Cut through the poles

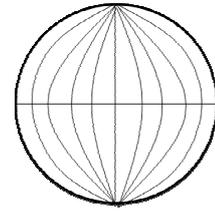
Divide the globe in half

Equal in length

Prime Meridian (0) is called Greenwich

Widest apart at equator

Closest at poles



Latitudes: Lie at right angles with longitudes

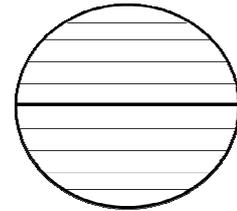
Concentric circles

Each circle have a different circumference

Circle with greatest circumference = equator (0°)

Are represented at the poles as a

point (90°)



(12)

3.2 Name the scale of measurement that will be used to record the following attribute data:

Population numbers

Population density

Population growth

Population group

(4)

3.3 Define the following terminology:

Geodesy

Map projection

Ellipsoid

Geoid

Datum

(5)

3.4 You are using an equal area cylindrical projection to represent the spherical earth on a flat surface. Explain the characteristics of this projection that can be derived by looking at the name.

(2)

3.5 Name and discuss the attribute data model mostly used to model attribute data in a GIS

(6)

Total (50)