# Andhra Pradesh State Council of Higher Education

#### **Notations:**

**Show Progress Bar:** 

- 1. Options shown in green color and with  $\checkmark$  icon are correct.
- 2. Options shown in red color and with \* icon are incorrect.

Question Paper Name :	GG2
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Subject Name: Geo Engineering and Geo Informatics

**Creation Date:** 2025-06-06 12:57:12

**Duration:** 120 **Total Marks:** 120 **Display Marks:** No **Share Answer Key With Delivery Engine:** Yes **Change Font Color:** No **Change Background Color:** No **Change Theme:** No **Help Button:** No **Show Reports:** No

# **Geo Engineering and Geo Informatics**

No

Group Number:	1
Group Id:	83189672
Group Maximum Duration:	0
<b>Group Minimum Duration:</b>	120
Show Attended Group?:	No
Edit Attended Group?:	No

Break time:

Group Marks:

120

# **Geo Engineering and Geo Informatics**

**Section Id:** 83189672

Section Number:

Section type:

Online

Mandatory or Optional: Mandatory

Number of Questions :120Number of Questions to be attempted :120Section Marks :120Maximum Instruction Time :0Sub-Section Number :1

**Sub-Section Id:** 83189672

**Question Shuffling Allowed:** Yes

Question Number: 1 Question Id: 8318968521 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

**Correct Marks: 1 Wrong Marks: 0** 

Where is Earth's core located relative to the surface?

#### **Options:**

2,900 kilometers below the surface

3,900 kilometers below the surface

2. 🗱

At the crust – mantle boundary

3. 🗱

1,900 kilometers below the surface

Question Number: 2 Question Id: 8318968522 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

Correct Marks: 1 Wrong Marks: 0

What is the term for the process that led to the formation of Earth's core?

#### **Options:**

Plate tectonics

Planetary differentiation

2. 🗸

Seafloor spreading

3. 💥

4. 🗱

Mantle convection

Question Number: 3 Question Id: 8318968523 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

What are polymorphs in mineralogy?

## **Options:**

3. 🗱

4. 🗱

Rocks formed under identical pressure and temperature conditions

Two or more minerals with the same chemical formula but different crystal structures

Crystals that form only in metamorphic environments

Minerals with different chemical formulas but similar crystal structures

Question Number: 4 Question Id: 8318968524 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

What characterizes a porphyritic texture in igneous rocks?

# **Options:**

Layers of alternating light and dark minerals

A texture in which some crystals are distinctly larger than the rest

rest

Crystals that form only from volcanic eruptions

Uniformly sized crystals throughout the rock

4. \*\*

Question Number: 5 Question Id: 8318968525 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

Which of the following correctly describes the composition of Earth's core?

#### **Options:**

1. 🗱

Silicate rocks with low-density elements

Solid iron-nickel outer core and liquid silicate inner core

Liquid iron-nickel outer core and solid iron-nickel inner core

Primarily aluminum silicate with traces of magnesium

4. 🗱

Question Number: 6 Question Id: 8318968526 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

What is the process called when a parent rock transforms due to heat and pressure without melting?

## **Options:**

Diagenesis

1. 🗱

Metamorphism

2. 🗸

Crystallization

3. 🦫

Erosio

4. \*\*

Question Number: 7 Question Id: 8318968527 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

Which of the following best explains the term "continental shield"?

#### **Options:**

```
Submarine ridges with high heat flow
1. 🗱
      Oceanic crust covered by continental sediments
2. 🗱
      Large regions of exposed Precambrian crystalline igneous and
      metamorphic rocks
     Young mountain ranges formed by recent tectonic activity
4. **
Question Number: 8 Question Id: 8318968528 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes
Correct Marks: 1 Wrong Marks: 0
 Which of the following is a framework silicate mineral?
Options:
     A. Olivine
     Biotite
2. 🗱
     Quartz
```

```
Pyroxene
```

Question Number: 9 Question Id: 8318968529 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

The cleavage in mica minerals is described as:

## **Options:**

Basal

Prismatic

Cubic Cubic

Irregular

Question Number: 10 Question Id: 8318968530 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

The primary instrument used for measuring horizontal and vertical angles in surveying is:

#### **Options:**

```
Theodolite
      Total station
      Plane table
3. 🗱
      Dumpy level
4. 🗱
Question Number: 11 Question Id: 8318968531 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes
Correct Marks: 1 Wrong Marks: 0
  High oblique photographs differ from low oblique photographs in that
  they:
Options:
     Are taken from a higher altitude
1. 🗱
      Include the horizon in the image
```

Are taken with a vertical camera axis

3. 🗱

Show less ground area

4. 🗱

Question Number: 12 Question Id: 8318968532 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

Correct Marks: 1 Wrong Marks: 0

Which type of map projection assumes a globe resting on a flat surface, producing a circular map with a central point of tangency?

#### **Options:**

Conic Projection

Mercator Projection

Azimuthal Projection

Cylindrical Projection

4. 💥

```
Correct Marks: 1 Wrong Marks: 0
```

Which map projection is widely used for nautical navigation due to its ability to represent lines of constant true direction?

# **Options:**

Azimuthal Projection

Robinson Projection

2. 🗱

Polyconic Projection

3. 🗱

Mercator Projection

4. 🗸

Question Number: 14 Question Id: 8318968534 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

Correct Marks: 1 Wrong Marks: 0

The point on the ground vertically beneath the camera at the time of exposure is called the:

#### **Options:**

Perceptive point

1. 🕷

Nadir Point 2. ✔

Principal point

3. 🗱

Isoline

4. 🗱

Question Number: 15 Question Id: 8318968535 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

Which of the following characteristics most clearly distinguishes an oblique photograph from a vertical photograph in aerial photography?

## **Options:**

Uniform scale throughout the photograph

1. 💥

Ability to see the horizon in the photograph

2. 🗸

Taken with the camera axis vertical to the ground

3. 🗱

Presence of overlapping areas between photos

4. \*\*

Question Number: 16 Question Id: 8318968536 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

Correct Marks: 1 Wrong Marks: 0

In remote sensing, super wide angle cameras are cameras whose angular field of view is:

#### **Options:**

Less than 60°

1. 💐

Between 60° and 90°

2. 💥

Greater than 90°

3. 🗸

Exactly 180°

Question Number: 17 Question Id: 8318968537 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

What does the term 'radiance' refer to in radiometry? **Options:** Energy per unit wavelength 1. 🕷 Energy per unit area 2. 🗱 Energy per unit area per unit solid angle 3. 🗸 Total energy emitted by a source 4. 🗱 Question Number: 18 Question Id: 8318968538 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0 Which of the following is not a radiometric quantity? **Options:** Radiant flux

Irradiance

Reflectance

Radiance

4. 🗱

Question Number: 19 Question Id: 8318968539 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

Which orbit is best suited for continuous weather monitoring over a specific region?

# **Options:**

4. 🗱

Molniya orbit

Polar orbit

Geostationary orbit

Sun-synchronous orbit

Question Number: 20 Question Id: 8318968540 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

# Geostationary satellites orbit at approximately:

## **Options:**

- 35,786 km
- 786 km
- 1000 km
- 500 km

 $Question\ Number: 21\ Question\ Id: 8318968541\ Question\ Type: MCQ\ Option\ Shuffling: Yes\ Display\ Question\ Number: Yes\$ 

Correct Marks: 1 Wrong Marks: 0

Across-track stereoscopic imaging is typically obtained by:

# **Options:**

- Combining radar and optical data
- Not combining radar and optical data

Using side-looking sensors from different satellite passes

Capturing nadir images over different regions

4. 🗱

Question Number: 22 Question Id: 8318968542 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

Correct Marks: 1 Wrong Marks: 0

Which of the following satellite systems is capable of along-track stereo imaging using fore and aft sensors?

## **Options:**

Cartosat-1

1. 🖋

**MODIS** 

2. 🛎

SPOT

3. 🗱

Landsat

4. 🗱

 $Question\ Number: 23\ Question\ Id: 8318968543\ Question\ Type: MCQ\ Option\ Shuffling: Yes\ Display\ Question\ Number: Yes\$ 

Which among the following is not related to GIS software's?

## **Options:**

STAAD Pro

QGIS

ARCVIEW

CAD

Question Number: 24 Question Id: 8318968544 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

**Correct Marks: 1 Wrong Marks: 0** 

Which of the following best describes topology in GIS?

#### **Options:**

- Raster resolution accuracy
- Geometric measurement of features
- Spatial relationships between vector features

# Storage of attribute information

4. 💥

Question Number : 25 Question Id : 8318968545 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Correct Marks : 1 Wrong Marks : 0

Which GIS file format is most commonly used for storing vector data, including points, lines, and polygons?

#### **Options:**

.img

.txt

.pps

shp.

Question Number : 26 Question Id : 8318968546 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Correct Marks : 1 Wrong Marks : 0

Which of the following represents the correct set of coordinate classification in GIS?

```
Options:
     Geographic, spherical systems
1. 🗱
      Geographic, projected systems
2. 🗸
      Linear, geometric systems
3. 🗱
      Spherical, projected systems
4. 💸
Question Number: 27 Question Id: 8318968547 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes
Correct Marks: 1 Wrong Marks: 0
 In GIS, what is the purpose of indexing spatial data in a database?
Options:
      To speed up data visualization
1. 🗱
      To improve spatial query performance
2. 🗸
      To store backup copies of data
3. 🗱
```

To manage spatial relationships

4. 💸

Question Number: 28 Question Id: 8318968548 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

Correct Marks: 1 Wrong Marks: 0

What is the key advantage of Object-Oriented Database Models in GIS?

**Options:** 

They only work with vector data

1. 💥

They are easier to use than relational databases

2. 🛎

They store data in a flat, three Dimensional table

3. 🗱

They allow for more complex data relationships and inheritance

4. 🗸

Question Number: 29 Question Id: 8318968549 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

What is the primary advantage of using a hierarchical database structure in GIS?

#### **Options:**

- Improved spatial data analysis
- Faster query response times
- Handling of data
- Clear parent-child relationships between data sets

Question Number: 30 Question Id: 8318968550 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

Which of the following would be considered a non-spatial data analysis technique?

#### **Options:**

2. 🗸

Raster data interpolation

Database queries using SQL

Buffer zone creation

3. 💥

Network analysis

4. 💸

Question Number: 31 Question Id: 8318968551 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

Correct Marks: 1 Wrong Marks: 0

In GIS, what is the primary purpose of using symbology?

# **Options:**

To perform spatial queries

To represent spatial features visually with symbols

To convert raster to vector

To store spatial data efficiently

Question Number: 32 Question Id: 8318968552 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

Which of the following types of visualizations would be most appropriate for displaying elevation data?

# **Options:** Heat map Bar chart 3D surface model Line graph 4. 🗱 Question Number: 33 Question Id: 8318968553 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes **Correct Marks: 1 Wrong Marks: 0** map projection is best suited for regional or hemispheric maps, but unsuitable for entire world map. **Options:** Cylindrical Equivalent

Conical Conical

Azimuthal

4. 💐

Question Number: 34 Question Id: 8318968554 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

**Correct Marks: 1 Wrong Marks: 0** 

Which attribute is not associated with digital maps?

## **Options:**

Colour

1. 🗱

Symbology

2. 🗱

South arrow

Legends

 $Question\ Number: 35\ Question\ Id: 8318968555\ Question\ Type: MCQ\ Option\ Shuffling: Yes\ Display\ Question\ Number: Yes\$ 

Across track scanning systems are also called as	scanner
systems.	
Options:	
Push broom	
Lateral broom	
Pull broom	
Whisk broom 4. ✓	
Question Number: 36 Question Id: 8318968556 Question Type: MCQ Option St Correct Marks: 1 Wrong Marks: 0	nuffling: Yes Display Question Number: Yes
RISAT stands for	
Options:	
Radio Satellite	
Radio Navigation and Ranging Satellite	

```
Radar Imaging Satellite
     Reference system
Question Number: 37 Question Id: 8318968557 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes
Correct Marks: 1 Wrong Marks: 0
  Joint earth-observing mission between ISRO and NASA using
  advanced radar imaging system is known as ______.
Options:
     NASA-ISRO Systematic Radar Mission (NISAR)
1. *
     NASA-ISRO Synthetic Aperture Radar (NISAR)
2. 🗸
     NASA-ISRO Side-looking Aperture Radar (NISAR)
3. 🗱
    NASA-ISRO Side-looking Aperture Radio (NISAR)
4. **
```

Question Number: 38 Question Id: 8318968558 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

Instrument used for monitoring water levels in rivers/reservoirs from space is known as	
Options :	
Stadiometer or Satellite Stadiometer	
Altimeter or Satellite Altimeter	
Space Theodolite	
LISS	
Question Number : 39 Question Id : 8318968559 Question Type : MCQ Option Shuffling : Yes Display Question Number : Ye Correct Marks : 1 Wrong Marks : 0	S
resolution defines the smallest difference of radiant	
energy detected by a sensor.	
Options :	
Spectral resolution	

2. 🗸	Radiometric resolution
3. 🗱	Temporal resolution
4. 🗱	Spatial resolution
	on Number : 40 Question Id : 8318968560 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes et Marks : 1 Wrong Marks : 0
Dif	ffused reflection of solar radiation from earth's surface is known
as_	<u> </u>
Option	ns:
1. *	Radiance
2. 🗱	Irradiance
3. 🗸	Albedo

4. 🗱	Reflectance
	ion Number : 41 Question Id : 8318968561 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes ect Marks : 1 Wrong Marks : 0
Th	e energy quantum for radiation is proportional to its
Optio	ns:
1. 🗸	Frequency
2. 🗱	Reciprocal of energy
3. 🗱	Square of frequency
4. 🕊	Square root of frequency
	ion Number : 42 Question Id : 8318968562 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes ect Marks : 1 Wrong Marks : 0
O	utput from a thermal sensor is a measurement
of	temperature of an object.

```
Options:
     Kinetic
     Radiant
      Blackbody
3. 🗱
     Infrared
Question Number: 43 Question Id: 8318968563 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes
Correct Marks: 1 Wrong Marks: 0
  Who is known as father of Indian Space Program?
Options:
     Prof. P. R. Pisharoty
1. 🗱
     Dr. Vikram Sarabhai
     Dr. Homi J. Bhabha
3. 🗱
```

```
Prof. U. R. Rao
```

Question Number: 44 Question Id: 8318968564 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

Correct Marks: 1 Wrong Marks: 0

National Remote Sensing Day is celebrated on \_\_\_\_\_every year.

# **Options:**

August 12

June 5

November 14

August 15

Question Number: 45 Question Id: 8318968565 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

**Correct Marks: 1 Wrong Marks: 0** 

Which colour of EM spectrum is used for bathymetry studies?

Option	as:
1. 🕊	Red
2. 🕊	UV
3. **	SWIR
4. 🗸	Green
	on Number : 46 Question Id : 8318968566 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes et Marks : 1 Wrong Marks : 0
	yleigh scattering occurs when particle size is than velength of incoming radiation.
Option	ns:
1. 🗸	very small
2. **	equal

```
not equal
3. 🗱
      very big
4. **
Question Number: 47 Question Id: 8318968567 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes
Correct Marks: 1 Wrong Marks: 0
  The reflectance _____ with presence of moisture, surface
  roughness or organic content in soils.
Options:
      increases
1. 38
      decreases
      remains same
3. **
      zero
4. **
```

Question Number: 48 Question Id: 8318968568 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

In	digital image processing, the process adjusts
trai	nslational and rotational alignment between two images.
Option	is:
1. 🗸	Registration
2. **	Filtering
3. **	Enhancement
4. 🗱	Processing
Question Number: 49 Question Id: 8318968569 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0  helps to transform a correlated dataset into uncorrelated	
dat	aset.
Option	
-	
1. 🗱	Rationing

```
Principal Component Analysis
      Fusion
3. 🗱
      Classification
4. 🗱
Question Number: 50 Question Id: 8318968570 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes
Correct Marks: 1 Wrong Marks: 0
  Rectification accuracy is expressed in terms of
                                                                    error.
Options:
     Commission
1. 🗱
      Root Mean Square
      Kappa
      Omission
4. 💥
```

Question Number: 51 Question Id: 8318968571 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0		
Spectral region of electromagnetic radiation which passes through atmosphere without much attenuation is known as		
Options:		
Ozone hole		
Atmospheric window		
Ozone window		
Black hole		
Question Number : 52 Question Id : 8318968572 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Correct Marks : 1 Wrong Marks : 0		
GIS ideally deals with		
Options:		
Numeric data		

Binary data Spatial data Complex data Question Number: 53 Question Id: 8318968573 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes **Correct Marks: 1 Wrong Marks: 0** SDI stands for **Options:** Spatial Data Interface 1. 🗱 Spatial Data Infrastructure Spatial Data Intention 3. 🗱 Spatial Data International 4. 💸

Question Number: 54 Question Id: 8318968574 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

```
Correct Marks: 1 Wrong Marks: 0
                 defines the property of connectivity in GIS.
Options:
      Proximity
1. 🗱
      Neighbourhood
2. 💥
      Topology
3. 🗸
      Boolean Identity
4. 💸
Question Number: 55 Question Id: 8318968575 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes
Correct Marks: 1 Wrong Marks: 0
 Which of the following are true of AM/FM systems?
Options:
     The terms GIS and AM/FM are synonymous
1. 🗱
```

AM/FM are always vector based AM/FM is a specialized GIS AM/FM systems are always confined to the utility industry Question Number: 56 Question Id: 8318968576 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes **Correct Marks: 1 Wrong Marks: 0** India-WRIS is a portal for \_\_\_\_\_\_. **Options:** Agricultural resources Water resources Forest resources Geological resources 4. 🗱

Question Number: 57 Question Id: 8318968577 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0	
8e	is a type of vector data model.
Option	ns:
1. 🗸	Spaghetti
2. *	Spatial
3. **	Raster
4. 🗱	Quadtree
	on Number: 58 Question Id: 8318968578 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes et Marks: 1 Wrong Marks: 0
The	e purpose of GIS data models is to
Option	is:
1. 🕷	Generate random data structures

```
Analyse and describe fictional features in GIS
2. **
      Represent real-world features in various forms like points, lines,
      arcs, and polygons
3. 🗸
     Create abstract sculptures of real world
4. 🗱
Question Number: 59 Question Id: 8318968579 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes
Correct Marks: 1 Wrong Marks: 0
              function is performed by data input/capture subsystem of
 GIS.
Options:
     Retrieval of data elements
1. 🗱
     Storage of data elements
2. 💥
     Acquiring data
3. 🗸
```

# Transformation of data

Question Number: 60 Question Id: 8318968580 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

A network is a series of interconnecting lines along which there is a flow of .

### **Options:**

Entities

**Points** 

2. 💥

Nodes

Data 🔪

Question Number: 61 Question Id: 8318968581 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

Which interpolation technique is not used for continuous data?

```
Kriging
1. 🗱
      Trend surface fitting
2. 💥
      Digitization
      Triangulation
4. 💸
Question Number: 62 Question Id: 8318968582 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes
Correct Marks: 1 Wrong Marks: 0
 What is the approximate radius of the Earth?
Options:
      5,000 km
     6,371 km
      7,500 km
```

```
8,000 km
```

4. 🗱

Question Number: 63 Question Id: 8318968583 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

The Earth's core is primarily made up of which two elements?

#### **Options:**

Silicon and Oxygen

1. 🗱

Iron and Nickel

2. 🗸

Iron and Magnesium

3. 💥

Nickel and Oxygen

4. 🗱

Question Number: 64 Question Id: 8318968584 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

Which of the following statements accurately describes the formation of an intrusive igneous rock?

It forms from the rapid cooling of lava on the Earth's surface, resulting in fine-grained crystals.

1. 3

It forms from the compaction and cementation of sediments over millions of years.

2. 💥

It forms from the slow cooling of magma beneath the Earth's surface, allowing for the development of large crystals.

3. 🗸

It forms from the transformation of existing rocks due to high temperatures and pressures.

4. 🗱

Question Number : 65 Question Id : 8318968585 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Correct Marks : 1 Wrong Marks : 0

Which one of the following are the two main constituents of granite?

## **Options:**

Iron and nickel

1. 🗱

```
Iron and silver
2. 💸
     Silica and aluminium
     Iron Oxide and potassium
Question Number: 66 Question Id: 8318968586 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes
Correct Marks: 1 Wrong Marks: 0
 Which of the following rocks is an intrusive igneous rock?
Options:
      Basalt
1. 🗱
      Rhyolite
       Granite
3. 🗸
       Pumice
4. 💥
```

Question Number: 67 Question Id: 8318968587 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

Correct Marks: 1 Wrong Marks: 0

Which rock type primarily forms from cooling of lava on Earth's surface?

## **Options:**

Plutonic igneous

1. 💥

Volcanic igneous

Metamorphic 3. ❖

Clastic sedimentary

4. \*\*

Question Number: 68 Question Id: 8318968588 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

**Correct Marks: 1 Wrong Marks: 0** 

Which of the following is true about rocks?

```
Rocks are composed of only one mineral.
1. 🗱
     Rocks do not contain any non-mineral matter.
2. 🗱
      Coal is not considered a true rock.
     Most rocks are a mixture of minerals.
4. 🗸
Question Number: 69 Question Id: 8318968589 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes
Correct Marks: 1 Wrong Marks: 0
 A rock that forms from cooling lava is classified as an.
Options:
     Intrusive igneous rock
1. **
      Extrusive igneous rock
2. 🗸
      Extrusive metamorphic rock
3. 🗱
```

# Intrusive volcanic rock

Question Number: 70 Question Id: 8318968590 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

Correct Marks: 1 Wrong Marks: 0

Which environment is most favourable for the formation of metamorphic rocks?

# **Options:**

High pressure and high temperature

1.

Low pressure and low temperature

2. 💥

High pressure and low temperature

3. 🗱

Surface weathering

4. 💥

Question Number: 71 Question Id: 8318968591 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

	neous rocks that crystallize from magma and are composed almost tirely of quartz and feldspars have a
Option	s:
1. 🗸	Granitic composition
2. 🗱	Ultramafic composition
3. **	Andesitic composition
4. **	Basaltic composition
	on Number : 72 Question Id : 8318968592 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes et Marks : 1 Wrong Marks : 0
The	e mineral group that constitutes most of Earth's crust is
Option	ns:
1. *	Carbonates

Oxides

Silicates

Sulfides

4. 💸

 $Question\ Number: 73\ Question\ Id: 8318968593\ Question\ Type: MCQ\ Option\ Shuffling: Yes\ Display\ Question\ Number: Yes\$ 

Correct Marks: 1 Wrong Marks: 0

Which of the following statements accurately distinguishes between a silicate and a non-silicate mineral?

## **Options:**

Silicate minerals are always harder than non-silicate minerals.

1. 🗱

Non-silicate minerals never contain oxygen in their chemical formula.

torn

Silicate minerals contain silicon and oxygen as major elements, while non-silicate minerals do not always contain both.

Non-silicate minerals are always formed through biological processes.

4. 3

Question Number: 74 Question Id: 8318968594 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

Correct Marks: 1 Wrong Marks: 0

Which instrument is primarily used to measure angles between lines of sight in surveying?

#### **Options:**

A GPS receiver.

1. 💥

A theodolite.

A level.

A clinometer.

4. \*\*

Question Number: 75 Question Id: 8318968595 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

Which type of aerial photograph is taken with the camera's optical axis directed vertically downward?

# **Options:**

An oblique photograph.

1. \*\*

A tilted photograph.

2. 🗱

A stereoscopic photograph.

3. 🗱

A vertical photograph.

4. 🗸

Question Number: 76 Question Id: 8318968596 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

Correct Marks: 1 Wrong Marks: 0

Which of the following is NOT typically found as marginal information on a topographic sheet?

1. 🕷	The sheet name and number.
2. 🗱	The contour interval.
3. 🗱	The magnetic declination.
4. 🗸	The coordinates of specific landmarks within the mapped area.
	ion Number : 77 Question Id : 8318968597 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes ct Marks : 1 Wrong Marks : 0
Pa	rallax in aerial photographs is an error due to
Option	ns:
1. 🗸	Movement of camera and ground relief
2. 🗱	Overlap in photographs

Distortion caused by camera lens 3. \*\* Distortion due to lack of focus 4. 🗱 Question Number: 78 Question Id: 8318968598 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes **Correct Marks: 1 Wrong Marks: 0** In map projections, the Mercator projection is best suited for **Options:** Polar regions Small-scale world maps 2. 🗱 Navigation purposes Land use planning

Question Number: 79 Question Id: 8318968599 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

```
Correct Marks: 1 Wrong Marks: 0
```

Which of the following is a key characteristic of a map projection?

# **Options:**

It accurately portrays the true shape of the Earth's surface.

1. \*

It preserves the scale and area of the map.

2. 🗱

It provides a 3D representation of the terrain.

3. 🗱

It distorts the Earth's shape to fit on a flat surface.

4. 🗸

Question Number: 80 Question Id: 8318968600 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

Which aerial photo format typically provides the largest area of coverage on a single photograph?

## **Options:**

Small format (e.g., 70mm)

1. 💥

```
Medium format (e.g., 9 inches x 9 inches)
2. 🗸
      Large format (e.g., 12 inches x 12 inches)
3. 🗱
      Digital imagery with a small sensor size.
4. 💥
Question Number: 81 Question Id: 8318968601 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes
Correct Marks: 1 Wrong Marks: 0
  Which type of map projection is most likely to distort the shape of
  large landmasses?
Options:
      Cylindrical map projection.
      Conic map projection.
2. 🗱
      Planar map projection.
3. 🗱
```

Gnomonic map projection.

4. 🗸

Question Number: 82 Question Id: 8318968602 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

Correct Marks: 1 Wrong Marks: 0

The process of transforming and representing features from the Earth's curved surface onto a flat map is known as \_\_\_\_\_\_.

## **Options:**

- Geo-referencing. .
- Cartography.
- Photogrammetry.
  - Remote sensing

4. \*\*

 $Question\ Number: 83\ Question\ Id: 8318968603\ Question\ Type: MCQ\ Option\ Shuffling: Yes\ Display\ Question\ Number: Yes\$ 

**Correct Marks: 1 Wrong Marks: 0** 

In cartography, map generalization refers to the process of:

#### **Options:**

Accurately representing every single feature on the ground at the map scale.

1. 💥

Simplifying or omitting features on a map to maintain clarity and legibility at a reduced scale.

2. 🗸

Projecting geographic coordinates onto a flat map surface.

3. 💥

Assigning colors and symbols to different features on a map.

4. 💥

Question Number: 84 Question Id: 8318968604 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

Correct Marks: 1 Wrong Marks: 0

The propagation of electromagnetic waves involves the interplay of oscillating:

# **Options:**

Electric and magnetic fields perpendicular to each other and the direction of propagation.

1. 🗸

Electric and gravitational fields parallel to each other and perpendicular to the direction of propagation.

2. \$

3. 🗱

Magnetic and gravitational fields perpendicular to each other and parallel to the direction of propagation.

Electric and magnetic fields parallel to each other and the direction of propagation.

4. \*\*

Question Number: 85 Question Id: 8318968605 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

Correct Marks: 1 Wrong Marks: 0

Radiance is best defined as:

#### **Options:**

Power per unit area

1. 💥

Power per unit solid angle

2. 🕷

Power per unit area per unit solid angle

Power per unit wavelength

4. 💸

Question Number: 86 Question Id: 8318968606 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

Correct Marks: 1 Wrong Marks: 0

Which of the following defines the spatial resolution of a sensor?

#### **Options:**

Number of spectral bands

1. 💥

Smallest object detectable on the ground

2. 🗸

Energy detection capacity

3. 🗱

Frequency of satellite revisits

4. 🗱

Question Number: 87 Question Id: 8318968607 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

**Correct Marks: 1 Wrong Marks: 0** 

Higher radiometric resolution means:

1. 🕊	Ability to distinguish finer wavelength differences		
2. 🗸	Ability to detect small differences in energy		
3. 🗱	Ability to capture more images per day		
4. <b>×</b>	Ability to detect larger objects		
Question Number : 88 Question Id : 8318968608 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Correct Marks : 1 Wrong Marks : 0			
Al	ong-track stereoscopic imaging involves		
Optio	ns:		
l. <b>×</b>	Two separate satellites imaging the same area		
2. 🗸	Imaging the same area from different angles during the same orbit		

Successive orbits imaging the same area

3. 🗱

Using a microwave radar for 3D imaging

4. 3

Question Number: 89 Question Id: 8318968609 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

**Correct Marks: 1 Wrong Marks: 0** 

Which systematic error in digital image processing is caused by the Earth's rotation during image acquisition?

### **Options:**

Scan Skew

. 💐

Mirror-Scan Velocity

Panoramic Distortion

3. 💥

Earth Rotation

4. 🗸

Question Number: 90 Question Id: 8318968610 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

The ALOS satellite belongs to
Options:  Europe  1. **
Japan 2. 🗸
Canada 3. **
India 4. **
Question Number: 91 Question Id: 8318968611 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0
The Copernicus program for Earth Observation is run by
Options:
NASA
JAXA

ESA- European Space Agency

ISRO

Question Number: 92 Question Id: 8318968612 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

**Correct Marks: 1 Wrong Marks: 0** 

Which image enhancement technique stretches the range of pixel intensity values to cover the full dynamic range of display devices?

#### **Options:**

Level slicing

Contrast stretching

Gray level thresholding

Histogram equalization

Question Number: 93 Question Id: 8318968613 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

The European Space Agency's primary Earth observation program is		
known as		
Options:		
ENVISAT/Sentinel		
JERS 2. *		
3. * ALOS		
CBERS 4. *		
Question Number : 94 Question Id : 8318968614 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Correct Marks : 1 Wrong Marks : 0		
For urban mapping requiring very detailed building footprints, the ideal satellite would provide		
Options:		
30 m spatial resolution multispectral data		
5 m spatial resolution panchromatic data		

1 m or finer spatial resolution imagery

250 m spatial resolution MODIS data

4. 🗱

Question Number: 95 Question Id: 8318968615 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

Correct Marks: 1 Wrong Marks: 0

What does spectral resolution refer to in remote sensing?

#### **Options:**

Ability to detect different wavelengths of electromagnetic radiation

1. 🗸

Ability to distinguish between different features on the ground

Ability to capture images at various times

Ability to discern details within an image

Question Number: 96 Question Id: 8318968616 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

Which of the following best describes a relational database structure commonly used in GIS?

# **Options:**

Data is organized in a tree-like hierarchy.

1. 🗱

Data elements are linked through predefined relationships, forming a network.

Data is organized into tables with rows representing entities and columns representing attributes, with relationships established through keys.

4. \*

Spatial data and attribute data are stored in separate, unconnected files.

Question Number: 97 Question Id: 8318968617 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

**Correct Marks: 1 Wrong Marks: 0** 

Raster data typically represents geographic phenomena as:

```
Points, lines, and polygons.
      A grid of cells, each with an associated value.
      Topologically structured features with nodes and edges.
3. 🗱
      A collection of attribute records linked to spatial coordinates.
4. **
Question Number: 98 Question Id: 8318968618 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes
Correct Marks: 1 Wrong Marks: 0
 A topological error where adjacent polygons overlap is
 called
Options:
     Dangle
     Overshoot
     Gap
```

```
Sliver
```

Question Number: 99 Question Id: 8318968619 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

DEM files are critical in which GIS applications?

## **Options:**

- Noise pollution mapping
- Surface water runoff modeling
- Soil pH mapping
- Land use categorization

Question Number: 100 Question Id: 8318968620 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

In raster to vector conversion, errors typically occur because of\_\_\_\_\_.

```
Topological inaccuracies
      Attribute duplication
2. 🗱
      File compression
      Metadata loss
4. *
Question Number: 101 Question Id: 8318968621 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes
Correct Marks: 1 Wrong Marks: 0
 In the vector data model, an area is typically stored as
Options:
      A single coordinate pair representing its centroid.
1. *
      A grid of cells covering its extent.
2. 🗱
     A closed sequence of connected coordinate pairs forming a
<sub>3. ✓</sub> polygon.
```

4. \*\* Question Number: 102 Question Id: 8318968622 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes **Correct Marks: 1 Wrong Marks: 0** TIN (Triangulated Irregular Network) sheeting is a method used to represent **Options:** Categorical spatial data. Continuous surface data using non-overlapping triangles. Linear features with associated attributes. 3. \*\* Regularly spaced grid data 4. \*\* Question Number: 103 Question Id: 8318968623 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes **Correct Marks: 1 Wrong Marks: 0** A common challenge in raster to vector conversion, especially when dealing with scanned maps, is

A series of disconnected line segments

Options:	
1. 🕊	Loss of attribute information.
2. **	Introduction of topological errors.
3. 🗸	Generalization and loss of detail in curved or complex features.
4. *	Difficulty in assigning coordinate values.
	on Number : 104 Question Id : 8318968624 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes et Marks : 1 Wrong Marks : 0
Corre	et Marks: 1 Wrong Marks: 0
Corre	
Correc	et Marks : 1 Wrong Marks : 0  uctured Query Language (SQL) is primarily used in GIS
Str to_	et Marks : 1 Wrong Marks : 0  uctured Query Language (SQL) is primarily used in GIS

Visualize spatial data in different map projections. 3. 🗱 Convert data between different file formats. 4. \*\* Question Number: 105 Question Id: 8318968625 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes **Correct Marks: 1 Wrong Marks: 0** A GPS collected point dataset suffers from high horizontal error. The best immediate action is: **Options:** Increase the sampling interval 1. \* Correct using differential GPS (DGPS) Rasterize the point data Smooth using TIN creation

4. 🗱

Question Number: 106 Question Id: 8318968626 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

**Correct Marks: 1 Wrong Marks: 0** 

In the context of GIS modeling, a conceptual model represents:

#### **Options:**

The physical implementation of the database.

A high-level, user-oriented understanding of the real-world phenomena and their relationships.

The logical organization of data elements and their relationships within a database.

The specific data structures and file formats used to store the data.

4. 🗱

Question Number: 107 Question Id: 8318968627 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

A key characteristic of object-oriented database models in GIS is their ability to:

Only store spatial data efficiently.

1. 💥

Represent both spatial and non-spatial data as objects with associated attributes and behaviors (methods).

Organize data in a strictly hierarchical structure.

3. 🗱

Primarily handle raster data.

Question Number: 108 Question Id: 8318968628 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

Recent trends in GIS applications include all EXCEPT:

#### **Options:**

Mobile GIS

Cloud-based GIS

2. 💥

Real-time spatial analytics

3. 💥

Paper-based cartography

4. 🗸

Question Number: 109 Question Id: 8318968629 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

Correct Marks: 1 Wrong Marks: 0

In GIS, what is the function of a topology rule?

## **Options:**

To enforce spatial relationships between features

1.

To define the spatial extent of a dataset

2. 💥

To specify the coordinate system of a map

3. 🕯

To categorize features based on attributes

4. 🗱

Question Number: 110 Question Id: 8318968630 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes

**Correct Marks: 1 Wrong Marks: 0** 

In the context of hydrological modeling within GIS, a Digital Elevation Model (DEM) is crucial for:

#### **Options:**

Determining soil texture and permeability.

1. \*

Estimating evapotranspiration rates.

2. 🗱

Delineating watersheds and analyzing flow direction.

3. 🗸

Measuring rainfall intensity directly.

4. 💸

Question Number: 111 Question Id: 8318968631 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

If A and B are two non-zero square matrices of same size such that the product matrix AB is a zero matrix, then which of the following must be true?

Both A and B are invertible

1. 3

At least one of A or B is singular

A + B is invertible

3. 🗱

A and B must be symmetric matrices

4. 💸

Question Number: 112 Question Id: 8318968632 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

Consider the system of equations:

$$x + y + z = 6$$
  
 $2x + 2y + 3z = 13$   
 $3x + 4y + 5z = 20$ 

Which of the following statements is true about the solution to this system?

The system has a unique solution.

The system has no solution.

2. 🗱

The system has infinitely many solutions.

3. 🗱

The system has finitely many solutions but not unique.

4. 💸

Question Number: 113 Question Id: 8318968633 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

Let  $f: \mathbb{R} \to \mathbb{R}$  be a function such that f(0) = 3 and  $|f'(x)| \le 2$ ,

 $\forall x \in \mathbb{R}$ . Then f(2) lies in which of the following intervals?

Question Number: 114 Question Id: 8318968634 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

The directional derivative of the function  $f(x, y) = 2x^2 + y^2$  along a line directed from (0,0) to (1,1), evaluated at the point

$$x = 1, y = 1,$$
 is \_\_\_\_\_

$$3\sqrt{2}$$

4.

Question Number: 115 Question Id: 8318968635 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

Given  $f(z) = \frac{z}{(z-2)^2}$ , which of the following is the Laurent series expansion of f(z) around z = 2?

**Options:** 

$$f(z) = \frac{1}{(z-2)} + \frac{1}{(z-2)^2}$$

1. \*

$$f(z) = \frac{2}{(z-2)} + \frac{z}{(z-2)^2}$$

2. 💥

$$f(z) = \frac{z}{(z-2)^2}$$

3. \$

$$f(z) = \frac{1}{(z-2)} + \frac{2}{(z-2)^2}$$

4. 🗸

Question Number: 116 Question Id: 8318968636 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

A complex function f(z) = u + iv with u = Re(z) + Im(z) is analytic if  $v = \underline{\hspace{1cm}}$ 

#### **Options:**

v = Re(z) + Im(z) + c, where c is an arbitrary constant

v = -Re(z) + Im(z) + c, where c is an arbitrary

constant

v = Re(z) - Im(z) + c, where c is an arbitrary constant

3. 🗱

v = -Re(z) - Im(z) + c, where c is an arbitrary

constant

Question Number: 117 Question Id: 8318968637 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

Let  $f(x) = x^3 - \frac{9}{2}x^2 + 6x - 2$  be a function defined on the closed interval [0,3]. Then, the global maximum value of f(x) is

# **Options:**

- 4.5
- 0.5
- 2.5
- 3.0

Question Number: 118 Question Id: 8318968638 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

In a town, the probability that a person attends a gym on weekdays is 0.7, the probability that a person attends the gym on weekends is 0.4, and the probability that a person attends the gym on weekdays or weekends, or both is 0.3. What is the probability that a person attends the gym on both weekdays and weekends?

#### **Options:**

0.6

2. \*\*

0.8

0.9

Question Number: 119 Question Id: 8318968639 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

In a workshop of having 100 machines, 25 machines are defected. Assuming the Poisson law for the number of defected machines, the probability that a random sample of 5 machines will have no defective machine is \_\_\_\_

## **Options:**

$$e^{-0.25}$$

$$0.25 e^{-0.25}$$

$$0.25 e^{-1.25}$$

$$e^{-1.25}$$

Question Number: 120 Question Id: 8318968640 Question Type: MCQ Option Shuffling: Yes Display Question Number: Yes Correct Marks: 1 Wrong Marks: 0

Let A, B be two events of a sample space such that  $P(A) = \frac{1}{4}$ ,  $P(B|A) = \frac{1}{2}$ ,  $P(A|B) = \frac{1}{4}$ . If  $\overline{B}$  is the complement of B, then  $P(A|\overline{B})$  is \_\_\_\_\_

# Options:

3

1. 🗱

2. 🗸

 $\frac{1}{3}$ 

3. 🗱

2

**4 %**