**QUESTION BANK “LAND & RESOURCE SURVEY & MANAGEMENT”**

**1ST Year Course: Introduction to Natural Resources ( Course Code: LRSM-111 )**

01) What is the primary goal of natural resource management?

a) To maximize economic benefits

b) To conserve resources for future generations

c) To mitigate environmental impacts

d) To promote sustainable development

Answer: d) To promote sustainable development

02) Which of the following is a renewable natural resource?

a) Coal

b) Water

c) Oil

d) Natural Gas

Answer: b) Water

03) What is the process of managing natural resources to meet the needs of present and future generations called?

a) Sustainable development

b) Resource conservation

c) Environmental management

d) Natural resource management

Answer: a) Sustainable development

04) Which of the following is a non-renewable natural resource?

a) Solar energy

b) Wind energy

c) Fossil fuel

d) Hydro energy

Answer: c) Fossil fuel

05) What is the main purpose of natural resource management?

a) To exploit natural resources for economic gain

b) To protect the environment from human activities

c) To manage natural resources for sustainable development

d) To conserve natural resources for future generations

Answer: c) To manage natural resources for sustainable development

06) Which of the following is an example of a natural resource?

a) Building

b) Road

c) Water

d) Car

Answer: c) Water

07) What is the importance of natural resource management?

a) To provide economic benefits

b) To protect the environment

c) To conserve natural resources

d) All of the above

Answer: d) All of the above

08) Which of the following is a benefit of sustainable natural resource management?

a) Increased environmental degradation

b) Decreased economic benefits

c) Improved quality of life

d) Increased resource depletion

Answer: c) Improved quality of life

09) What is the role of natural resource management in sustainable development?

a) To promote economic growth

b) To protect the environment

c) To manage natural resources for sustainable development

d) To conserve natural resources

Answer: c) To manage natural resources for sustainable development

10) Which of the following is a challenge facing natural resource management?

a) Overexploitation of resources

b) Underutilization of resources

c) Environmental degradation

d) All of the above

Answer: d) All of the above

**1ST Year Course: Fundamentals of Surveying & Mapping ( LRSM-123 )**

01) What is the primary objective of surveying?

a) To create maps

b) To determine property boundaries

c) To measure the size and shape of the Earth

d) To determine the relative positions of points on the Earth's surface

Answer: d) To determine the relative positions of points on the Earth's surface

02) Which type of surveying is used to measure the elevation of points on the Earth's surface?

a) Levelling

b) Traversing

c) Triangulation

d) Hydrographic surveying

Answer: a) Levelling

03) What is the name of the instrument used to measure angles and distances in surveying?

a) Theodolite

b) Transit

c) Level

d) Compass

Answer: a) Theodolite

04) Which type of mapping is used to create detailed maps of small areas?

a) Cadastral mapping

b) Topographic mapping

c) Hydrographic mapping

d) Photogrammetry

Answer: a) Cadastral mapping

05) What is the term for the process of determining the position of a point on the Earth's surface using measurements from multiple known points?

a) Triangulation

b) Traversing

c) Levelling

d) Intersection

Answer: a) Triangulation

06) Which type of surveying is used to measure the distance and direction between two points on the Earth's surface?

a) Traversing

b) Levelling

c) Triangulation

d) Hydrographic surveying

Answer: a) Traversing

07) What is the name of the map projection that preserves the shape and size of small areas on the Earth's surface?

a) Mercator projection

b) State plane coordinate system

c) Universal Transverse Mercator (UTM) system

d) Gauss-Kruger projection

Answer: b) State plane coordinate system

08) Which type of mapping is used to create maps of large areas, such as countries or continents?

a) Cadastral mapping

b) Topographic mapping

c) Hydrographic mapping

d) Cartography

Answer: d) Cartography

09) What is the term for the process of determining the elevation of a point on the Earth's surface using levelling instruments?

a) Levelling

b) Traversing

c) Triangulation

d) Benchmarking

Answer: a) Levelling

10) Which type of surveying is used to measure the position and elevation of points on the Earth's surface using satellite technology?

a) GPS surveying

b) Levelling

c) Traversing

d) Hydrographic surveying

Answer: a) GPS surveying

**1ST Year Course: Digital Mapping ( Course Code: LRSM-132 )**

01) What is the process of converting paper maps to digital format called?

a) Digitization

b) Vectorization

c) Rasterization

d) Georeferencing

Answer: a) Digitization

02 )What is the term for the process of assigning geographic coordinates to digital map features?

a) Geocoding

b) Georeferencing

c) Digitization

d) Vectorization

Answer: b) Georeferencing

03) Which type of digital map projection is used to display small areas with high accuracy?

a) Mercator projection

b) State plane coordinate system

c) Universal Transverse Mercator (UTM) system

d) Web Mercator projection

Answer: b) State plane coordinate system

04) What is the term for the process of creating a digital elevation model (DEM) from aerial photographs or satellite imagery?

a) Stereoplottting

b) Photogrammetry

c) Remote sensing

d) GIS analysis

Answer: b) Photogrammetry

05) Which software is commonly used for digital mapping and geospatial analysis?

a) ArcGIS

b) QGIS

c) Google Earth

d) AutoCAD

Answer: a) ArcGIS

06) What is the term for the process of combining multiple data layers into a single digital map?

a) Data fusion

b) Data integration

c) Data merging

d) Data overlay

Answer: d) Data overlay

07) Which type of digital map is used to display thematic data, such as population density or land use?

a) Base map

b) Topographic map

c) Thematic map

d) Navigation map

Answer: c) Thematic map

08) What is the term for the process of converting raster data to vector format?

a) Vectorization

b) Rasterization

c) Digitization

d) Georeferencing

Answer: a) Vectorization

09) Which file format is commonly used for storing and sharing digital elevation models (DEMs)?

a) ESRI Grid (.grid)

b) GeoTIFF (.tif)

c) DEM (.dem)

d) All of the above

Answer: d) All of the above

10) What is the unit of measurement for geographic coordinates?

a) Degrees, minutes, and seconds

b) Meters and kilometers

c) Feet and miles

d) Radians and meters

Answer: a) Degrees, minutes, and seconds

**1ST Year Course: General Geology ( Course Code: LRSM-142 )**

01) What is the scientific study of the Earth's physical structure, composition, and processes called?

a) Geology

b) Geography

c) Geophysics

d) Geochemistry

Answer: a) Geology

02) Which type of rock is formed from the cooling and solidification of magma or lava?

a) Igneous

b) Sedimentary

c) Metamorphic

d) Foliated

Answer: a) Igneous

03) What is the process of plate tectonics that occurs at mid-ocean ridges?

a) Continental drift

b) Sea-floor spreading

c) Subduction

d) Convergent boundary

Answer: b) Sea-floor spreading

04) Which geological event is characterized by the sudden release of energy that creates seismic waves?

a) Earthquake

b) Volcanic eruption

c) Landslide

d) Flood

Answer: a) Earthquake

05) What is the term for the remains or traces of living organisms from the past?

a) Fossil

b) Mineral

c) Rock

d) Soil

Answer: a) Fossil

06) Which type of geological feature is formed by the erosion of a river?

a) Canyon

b) Waterfall

c) Delta

d) Glacier

Answer: a) Canyon

07) What is the process of weathering that involves the breakdown of rocks into smaller particles?

a) Mechanical weathering

b) Chemical weathering

c) Biological weathering

d) Erosion

Answer: a) Mechanical weathering

08) Which type of rock is formed from the compression and cementation of sediments?

a) Igneous

b) Sedimentary

c) Metamorphic

d) Foliated

Answer: b) Sedimentary

09) What is the term for the movement of tectonic plates towards each other?

a) Convergent boundary

b) Divergent boundary

c) Transform boundary

d) Plateau

Answer: a) Convergent boundary

10) Which geological feature is formed by the accumulation of snow and ice over time?

a) Glacier

b) Mountain

c) Valley

d) Plain

Answer: a) Glacier

**1ST Year Course: Geographic Information System ( Course Code LRSM-152 )**

01) What is the primary function of a GIS?

a) To create maps

b) To analyze spatial data

c) To store data

d) To perform calculations

Answer: b) To analyze spatial data

02) Which type of data is used in GIS?

a) Spatial data

b) Tabular data

c) Image data

d) All of the above

Answer: d) All of the above

03) What is the term for the process of assigning geographic coordinates to data?

a) Geocoding

b) Georeferencing

c) Digitization

d) Vectorization

Answer: a) Geocoding

04) Which GIS tool is used to create a new feature class by combining two or more existing feature classes?

a) Buffer

b) Union

c) Intersect

d) Merge

Answer: d) Merge

05) What is the term for the process of creating a digital representation of a geographic feature?

a) Digitization

b) Vectorization

c) Georeferencing

d) Spatial analysis

Answer: a) Digitization

06) Which GIS software is developed by Esri?

a) ArcGIS

b) QGIS

c) Google Earth

d) MapInfo

Answer: a) ArcGIS

07) What is the term for the process of analyzing spatial relationships between data?

a) Spatial analysis

b) Spatial modeling

c) Spatial visualization

d) Spatial statistics

Answer: a) Spatial analysis

08) Which type of GIS analysis is used to predict future events or scenarios?

a) Spatial analysis

b) Spatial modeling

c) Spatial visualization

d) Spatial statistics

Answer: b) Spatial modeling

09) What is the term for the process of creating a visual representation of spatial data?

a) Spatial visualization

b) Spatial analysis

c) Spatial modeling

d) Cartography

Answer: a) Spatial visualization

10) Which GIS data format is used for storing and sharing spatial data?

a) Shapefile (.shp)

b) GeoJSON (.geojson)

c) KML (.kml)

d) All of the above

Answer: d) All of the above

**2nd Year Course: Tectonic Geology ( Course code LRSM-212 )**

01)What is the theory that explains the movement of the Earth's lithosphere?

a) Plate Tectonics

b) Continental Drift

c) Sea-Floor Spreading

d) Glaciation

Answer: a) Plate Tectonics

02) Which type of plate boundary is characterized by the collision of two plates?

a) Divergent

b) Convergent

c) Transform

d) Plateau

Answer: b) Convergent

03) What is the process of the Earth's crust being pulled apart at a plate boundary?

a) Rifting

b) Subduction

c) Collision

d) Transpression

Answer: a) Rifting

04) Which mountain range is an example of a continental-continental convergent plate boundary?

a) Himalayas

b) Andes

c) Rocky Mountains

d) Appalachian Mountains

Answer: a) Himalayas

05) What is the term for the movement of a plate towards the Earth's mantle?

a) Subduction

b) Obduction

c) Continental drift

d) Sea-floor spreading

Answer: a) Subduction

06) Which type of fault is formed at a transform plate boundary?

a) Normal fault

b) Reverse fault

c) Strike-slip fault

d) Oblique fault

Answer: c) Strike-slip fault

07) What is the term for the process of the Earth's crust being pushed together at a plate boundary?

a) Continental drift

b) Sea-floor spreading

c) Collision

d) Convergence

Answer: d) Convergence

08) Which type of plate boundary is characterized by the sliding of two plates past each other?

a) Divergent

b) Convergent

c) Transform

d) Plateau

Answer: c) Transform

09) What is the term for the remains of an ancient oceanic crust that has been pushed up onto a continent?

a) Ophiolite

b) Continental crust

c) Oceanic crust

d) Plateau

Answer: a) Ophiolite

10) Which type of rock is formed at a subduction zone?

a) Basalt

b) Granite

c) Andesite

d) Schist

Answer: c) Andesite

**2nd Year Course: Mineral and Rock Identification ( Course Code: LRSM-223 )**

01) Which mineral is commonly found in granite and has a hardness of 7 on the Mohs scale?

a) Quartz

b) Feldspar

c) Mica

d) Amphibole

Answer: a) Quartz

02) Which rock type is formed from the cooling and solidification of magma?

a) Igneous

b) Sedimentary

c) Metamorphic

d) Foliated

Answer: a) Igneous

03) Which mineral has a distinctive cleavage and is often found in sedimentary rocks?

a) Halite

b) Gypsum

c) Calcite

d) Pyrite

Answer: c) Calcite

04) Which rock type is formed from the compression and cementation of sediments?

a) Igneous

b) Sedimentary

c) Metamorphic

d) Foliated

Answer: b) Sedimentary

05) Which mineral is known for its cubic crystal form and is often found in hydrothermal veins?

a) Galena

b) Sphalerite

c) Pyrite

d) Halite

Answer: a) Galena

06) Which rock type is formed from the metamorphism of shale?

a) Slate

b) Phyllite

c) Schist

d) Gneiss

Answer: a) Slate

07) Which mineral has a hardness of 10 on the Mohs scale and is often found in kimberlite pipes?

a) Diamond

b) Graphite

c) Quartz

d) Topaz

Answer: a) Diamond

08) Which rock type is formed from the cooling and solidification of lava?

a) Igneous

b) Sedimentary

c) Metamorphic

d) Volcanic

Answer: d) Volcanic

09) Which mineral is known for its fibrous crystal form and is often found in metamorphic rocks?

a) Asbestos

b) Tremolite

c) Actinolite

d) Anthophyllite

Answer: a) Asbestos

10) Which rock type is formed from the metamorphism of basalt?

a) Greenschist

b) Amphibolite

c) Granulite

d) Diamond

Answer: b) Amphibolite

**2nd Year Course: Real Estate Registration Investigation ( LRSM-232 )**

01)What is the primary purpose of a title search?

a) To determine the market value of a property

b) To identify any potential issues with the property's title

c) To determine the property's zoning regulations

d) To identify any outstanding liens or encumbrances

Answer: b) To identify any potential issues with the property's title

02) Which of the following is a type of encumbrance?

a) Mortgage

b) Lien

c) Easement

d) All of the above

Answer: d) All of the above

03) What is the term for the process of verifying the ownership of a property?

a) Title search

b) Title investigation

c) Title examination

d) Title verification

Answer: c) Title examination

04) Which of the following is a type of title defect?

a) Error in the public records

b) Fraudulent signature

c) Unknown heir

d) All of the above

Answer: d) All of the above

05) What is the purpose of a title insurance policy?

a) To protect the buyer from title defects

b) To protect the lender from title defects

c) To protect the seller from title defects

d) To protect all parties from title defects

Answer: a) To protect the buyer from title defects

06) Which of the following is a type of easement?

a) Appurtenant easement

b) Easement in gross

c) Prescriptive easement

d) All of the above

Answer: d) All of the above

07) What is the term for the process of preparing a report on the status of a property's title?

a) Title search

b) Title investigation

c) Title examination

d) Title report

Answer: d) Title report

08) Which of the following is a type of title registration system?

a) Torrens system

b) Land registration system

c) Title insurance system

d) Deed registration system

Answer: a) Torrens system

09) What is the purpose of a title investigation?

a) To determine the market value of a property

b) To identify any potential issues with the property's title

c) To determine the property's zoning regulations

d) To identify any outstanding liens or encumbrances

Answer: b) To identify any potential issues with the property's title

10) Which of the following is a type of land use data that can be collected during a survey?

a) Land cover data

b) Land use data

c) Land tenure data

d) All of the above

Answer: d) All of the above

**2nd Year Course: Digital Cartography ( Course Code: LRSM-242 )**

01)Which software is widely used in digital cartography for creating and editing geospatial data?

a) ArcGIS

b) QGIS

c) Adobe Illustrator

d) AutoCAD

Answer: a) ArcGIS

02) What is the term for the process of converting paper maps to digital format?

a) Digitization

b) Vectorization

c) Rasterization

d) Georeferencing

Answer: a) Digitization

03) Which data format is commonly used in digital cartography for storing and sharing geospatial data?

a) Shapefile

b) GeoJSON

c) KML

d) CSV

Answer: a) Shapefile

04) What is the term for the process of assigning geographic coordinates to digital maps?

a) Geocoding

b) Georeferencing

c) Spatial analysis

d) Cartographic design

Answer: b) Georeferencing

05) Which technique is used in digital cartography to create 3D visualizations of terrain?

a) Hill shading

b) Contouring

c) Terrain modeling

d) Orthorectification

Answer: c) Terrain modeling

06) What is the term for the process of combining multiple data layers into a single map?

a) Data fusion

b) Data integration

c) Map overlay

d) Spatial analysis

Answer: c) Map overlay

07) Which software is widely used in digital cartography for creating interactive web maps?

a) ArcGIS Online

b) Mapbox

c) Leaflet

d) Google Maps

Answer: b) Mapbox

08) What is the term for the process of analyzing and visualizing spatial relationships in digital cartography?

a) Spatial analysis

b) Cartographic design

c) Geovisualization

d) Data visualization

Answer: a) Spatial analysis

09) Which data model is commonly used in digital cartography for storing and representing geospatial data?

a) Vector data model

b) Raster data model

c) Object-oriented data model

d) Relational data model

Answer: a) Vector data model

10) What is the term for the process of creating a digital map that is spatially accurate and visually appealing?

a) Cartographic design

b) Spatial analysis

c) Geovisualization

d) Map production

Answer: a) Cartographic design

**2nd Year Course: Remote Sensing Application of Land and Resources ( LRSM-252 )**

01) What is the primary focus of land cover classification in remote sensing?

a) Identifying and categorizing surface features of Earth

b) Analyzing atmospheric conditions

c) Monitoring ocean currents

d) Tracking weather patterns

Answer: a) Identifying and categorizing surface features of Earth

02) Which type of remote sensing uses reflected or emitted energy from the Earth's surface?

a) Active remote sensing

b) Passive remote sensing

c) Thermal remote sensing

d) Radar remote sensing

Answer: b) Passive remote sensing

03) How does remote sensing contribute to evaluating the implications of land management decisions?

a) By utilizing satellite imagery and other remote sensing data sources

b) By conducting field surveys and interviews

c) By analyzing economic data and market trends

d) By modeling future scenarios without data

Answer: a) By utilizing satellite imagery and other remote sensing data sources

04) Which remote sensing platform is specifically mentioned as an example of passive remote sensing?

a) Landsat

b) Sentinel-1

c) MODIS

d) RADARSAT-2

Answer: a) Landsat

05) What is the main difference between supervised and unsupervised classification methods in land cover classification?

a) Supervised classification uses predefined classes, while unsupervised classification does not

b) Unsupervised classification is faster, while supervised classification is more accurate

c) Supervised classification is used for urban areas, while unsupervised classification is used for natural areas

d) Unsupervised classification is used for local studies, while supervised classification is used for global studies

Answer: a) Supervised classification uses predefined classes, while unsupervised classification does not

06) What is the primary focus of land use/land cover change studies in remote sensing?

a) Identifying and quantifying changes in land use and land cover over time

b) Analyzing the impact of climate change on land use

c) Monitoring deforestation and habitat destruction

d) Tracking urbanization and city growth

Answer: a) Identifying and quantifying changes in land use and land cover over time

07) Which remote sensing technique is commonly used for crop monitoring?

a) Multispectral imaging

b) Hyperspectral imaging

c) Radar imaging

d) Thermal imaging

Answer: a) Multispectral imaging

08) How does remote sensing contribute to disaster management?

a) By providing critical information for response and recovery efforts

b) By predicting disasters before they occur

c) By monitoring weather patterns only

d) By analyzing economic data only

Answer: a) By providing critical information for response and recovery efforts

09) What is the purpose of image processing in remote sensing?

a) To enhance and analyze image data for meaningful information

b) To collect and store image data

c) To display image data only

d) To transmit image data only

Answer: a) To enhance and analyze image data for meaningful information

10) How does GIS contribute to remote sensing applications?

a) By providing a platform for analyzing and visualizing geospatial data

b) By collecting remote sensing data

c) By processing remote sensing data only

d) By storing remote sensing data only

Answer: a) By providing a platform for analyzing and visualizing geospatial data

**2nd Year Course: Hydrology and Engineering Geology ( Course Code: LRSM-262 )**

01) What is the term for the movement of water through a soil or rock?

a) Infiltration

b) Percolation

c) Transpiration

d) Evaporation

Answer: b) Percolation

02) Which type of precipitation is most likely to cause flooding?

a) Rain

b) Snow

c) Sleet

d) Hail

Answer: a) Rain

03) What is the term for the amount of water that can infiltrate the soil in a given time?

a) Infiltration rate

b) Percolation rate

c) Runoff rate

d) Evapotranspiration rate

Answer: a) Infiltration rate

04) What is the term for the application of geologic principles to engineering practice?

a) Engineering geology

b) Geotechnical engineering

c) Environmental geology

d) Structural geology

Answer: a) Engineering geology

05) Which type of rock is most suitable for construction purposes?

a) Igneous

b) Sedimentary

c) Metamorphic

d) Foliated

Answer: a) Igneous

06) What is the term for the process of soil settlement over time?

a) Consolidation

b) Compaction

c) Settlement

d) Subsidence

Answer: a) Consolidation

07) What is the term for the process of water movement through a plant?

a) Respiration

b) Photosynthesis

c) Transpiration

d) Evaporation

Answer: c) Transpiration

08) What is the term for the study of the behavior of earth materials?

a) Geotechnical engineering

b) Engineering geology

c) Soil mechanics

d) Rock mechanics

Answer: d) Rock mechanics

09) Which type of soil is characterized by high compressibility and low shear strength?

a) Clay

b) Silt

c) Sand

d) Gravel

Answer: a) Clay

10) What is the term for the process of soil strengthening through compaction?

a) Consolidation

b) Compaction

c) Settlement

d) Stabilization

Answer: b) Compaction

**NOTE**

It is important to mention here that the whole task was performed by the Teachers having Civil Engineering / Technology as their Academic Qualification. Whereas the said course "Land & Resource Survey & Management" has subjects related to Geology and Geography which are beyond the scope of Civil Trade.

It is therefore recommended that a comprehensive review may be done by the persons having Qualifications as 4 Years Degree MSc/BS Geology and MSc/BS Geography. Same is recommended for Tool Machinery Equipment List with the advice that the Tool Machinery Equipment must be finalized after review from above type of Geology and Geography Degree-holders.