

LEARNING STRATEGIES

After completing these units, the learner

1. Geology as a discipline

- 1.1 Explains the meaning of Earth Science and identifies geology as a discipline of science
- 1.2 States various branches of geology
- 1.3 Describes the role of geology in human society
- 1.4 Lists out the major organizations of the country related to geology

2. Origin and structure of the earth

- 2.1 Discusses the general characteristics of the members of the solar system
- 2.2 Describes the origin of the earth in the light of the big bang theory
- 2.3 Explains the origin of the earth based on the Nebular and Planetesimal hypotheses
- 2.4 States the true shape and size of the earth
- 2.5 Compares the relative time units of the Geologic Time Scales
- 2.6 Illustrates the internal structure of the earth
- 2.7 Appraises the characteristic features of the basic components of the earth system- atmosphere, hydrosphere, lithosphere and biosphere

3. The earth processes

- 3.1 Explains the relevance of systems approach and universality of changes as a frame work for understanding geological processes
- 3.2 Describes the significance of interfaces among various spheres in recognizing changes in the system
- 3.3 Differentiates between external and internal earth processes

3.4 Distinguishes among the types of physical, chemical and biological weathering processes

3.5 Identifies soil and regolith as a product of weathering

3.6 Makes a sketch of soil profile with its distinct horizons

4. Slope processes

4.1 Explains the significance of slope processes on the earth

4.2 Categorises and recognizes various types of slope process.

5. Ground water

5.1 Mentions the three sources of ground water

5.2 Identifies the significance of water for life

5.3 Describes the water bearing properties of rocks with examples

5.4 Prepares a chart showing the movement and characteristics of ground water in the zone aeration and zone of saturation .

5.5 Distinguishes different types of sub surface water bearing formations

5.6 Understands the impact of over exploitation of ground water

5.7 Points out the need, importance and strategies of ground water recharge

5.8 Explains different types of springs and wells

5.9 Presents a note on geological action of ground water

6. Streams

6.1 Identifies and explains the importance of streams in shaping the earth's surface

6.2 Classifies the different types of streams

6.3 Makes sketches of drainage basins and compares the different drainage patterns

6.4 Explains the process of fluvial erosion, stream transportation and stream deposition

6.5 Describes landforms associated with fluvial erosion

6.6 Explains the features developed by fluvial deposition

- 6.7 Identifies the concept of base level of erosion
- 6.8 Compares and explains different progressive stages of evolution of streams

7. Wind

- 7.1 Explains the processes of wind erosion and transportation and deposition
- 7.2 Describes major aeolian landforms associated with wind erosion
- 7.3 Describes the development of different landforms formed by aeolian deposition

8. Glaciers

- 8.1 Explains the significance of formation, distribution, movement and types of glaciers
- 8.2 Describes the process of glacial erosion and names the various landforms associated with glacial erosion
- 8.3 Identifies the landforms associated with glacial transport
- 8.4 Lists various features formed by glacial deposition
- 8.5 States the significance of glaciations and ice ages on the globe

9. Oceans

- 9.1 Distinguishes the waves, tides and currents of the ocean water
- 9.2 Illustrates the topographic features of the ocean floor
- 9.3 Points out the major type of sediments found in the ocean floor
- 9.4 Describes the types of coral reefs
- 9.5 States the erosional and depositional landforms of the coastal zone
- 9.6 Explains the causes of Sea level changes
- 9.7 Appraises the characteristic features of Kerala coast

10. Mountains

- 10.1 Defines the terms related with mountains.
- 10.2 Compares the formation of different type of mountains

11. The dynamic earth

- 11.1 Evaluates the Continental Drift hypothesis with the supporting and opposing evidences
- 11.2 Describes the Sea Floor Spreading theory and the concept of palaeomagnetism
- 11.3 Explains the Plate Tectonic Theory and plate boundaries

12. Minerals

- 12.1 Explains the salient features of minerals
- 12.2 Classifies minerals based on various criteria
- 12.3 Describes the different physical properties of minerals such as form and habit, colour, streak, lustre, cleavage, fracture, hardness and specific gravity
- 12.4 Identifies the most common rock forming minerals giving their salient physical properties
- 12.5 Explains the use in of minerals in different spheres of human life
- 12.6 States the common properties of gemstones and name some of the gem varieties of minerals