

GEOLOGY

Chapter No & Name	Focus areas
1. Geology as a discipline	Geology and its branches- Physical geology, Geomorphology, Mineralogy, Petrology, Historical geology (Palaeontology and Stratigraphy), Structural geology, Economic geology and Environmental geology. Geology and human society Names of major geological organizations of India- Geological Survey of India, Oil and Natural Gas Corporation, National Centre for Earth Science Studies, Centre for Water Resource Development and Management, Kerala state mining and geology department, Kerala state ground water department.
2. Origin and structure of the earth	Origin of the universe- Big bang theory Origin of the earth- Nebular hypothesis Shape of the earth (geoid) and size of the earth (equatorial and polar radii of the earth) Concept of geologic time-the Geologic Time Scale (<i>basics only</i>) Internal structure of the earth- Chemical layers of the earth (crust, mantle and core). Basic components of the earth system- Atmosphere, hydrosphere, lithosphere (<i>lithosphere and asthenosphere</i>) and biosphere (<i>basics only</i>) Thermal layers of the atmosphere Hydrologic cycle
3. Earth processes	External processes and internal earth processes Degradation (weathering and erosion) and aggradation (deposition) <i>Agents of erosion such as running water, groundwater, wind, glacier, waves and gravity (basics only)</i> Types of weathering- Physical weathering (thermal expansion and contraction, frost wedging) Chemical weathering (dissolution, oxidation, hydrolysis, hydration and carbonation) Biological weathering (root wedging) Residual and transported soils Soil profile
6. Streams	Drainage basin (definition) Fluvial erosion (hydraulic action, abrasion, attrition and corrosion) Landforms of fluvial erosion: stream valleys, gorges/canyons, pot holes and water falls (<i>basics only</i>) Fluvial depositional landforms: alluvial fans, floodplain deposits, meanders, oxbow lakes, natural levees and delta (<i>basics only</i>)
12. Minerals	Minerals-definition Physical properties of minerals- Crystal forms, colour, streak, lustre, hardness, cleavage, fracture, specific gravity and magnetism Minerals in daily life- Different areas in which minerals are used in daily life. Gemstones- names of popular gem varieties of material

