

Earth Science

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This book consists of four parts preceded by a preface, an introduction and followed by an appendix, glossary and index. The four parts consist of chapters that emphasize broad and coverage of basic topics and principles in geology, oceanography, meteorology, and astronomy. The book contains many figures, maps and photographs that were carefully selected to aid understanding.

Title of part one is The Solid Earth and it consists of chapters. Chapter one (*Minerals: Building Blocks of Rocks*) investigates the minerals versus rocks, composition and structure of minerals, properties of minerals, minerals groups and mineral resources. Chapter two (*Rocks: Materials of the lithosphere*) deals with the rock cycle, igneous rocks, sedimentary rocks, metamorphic rocks and the resources from rocks and minerals. Chapter three (*Weathering, Soil, and Mass Wasting*) discusses some topics as types and rates of weathering, profile and types of the soil, controls and types of the mass wasting. Chapter four lies under the title (*Running Water and Groundwater*). It discusses many topics as the water cycle, running water, stream valleys, drainage basins and drainage patterns, distribution and movement of groundwater, springs and the geological work of groundwater.

Chapter five (*Glaciers, Deserts, and Wind*) discusses how glaciers move, glacial deposits, glaciers of the past, evolution of the desert landscape, wind erosion and wind

deposits. Chapter six (*Earthquakes and Earth's Interior*) deals with some topics as earthquake waves, earthquake intensity and magnitude, destruction from earthquakes and earthquakes reveal earth's interior. Chapter seven (*Plate Tectonics*) discusses some topics as the plate boundaries, testing the plate tectonic model, but the most important topics of the eighth chapter (*Igneous Activity*) are the nature of volcanic eruptions, volcanic types and the igneous activity and plate tectonics. Chapter nine (*Mountain Building*) discusses the crustal uplift, rock deformation, mountain types and mountain building. Chapter ten (*Geologic Time*) deals with a short history of geology, relative dating, correlation of rock layers, fossils, absolute dating with radioactivity, the geological time scale and difficulties in its dating. The last chapter of this part i.e. the eleventh (*Earth History: A Brief Summary*) discusses the earth's origin, earth's atmosphere evolution, Precambrian time, Paleozoic era, Mesozoic era and Cenozoic era.

Part two The Oceans consists of a couple chapters and start's with chapter twelve (*Ocean Waters and the Ocean floor*) that studies some topics as the vast world oceans, resources from seawater, coral reefs and atolls. The most important topics in chapter ١٣ (*The Restless Ocean*) are the surface currents, tides, wave erosion, shoreline features and emergent and submergent coasts.

Title of part three is The Atmosphere and it consists of ٣ chapters. Chapter ١٤ (*Composition, Structure, and temperature*) discusses many topics as weather and climate, composition of the atmosphere, earth-sun relationships, mechanism of heat transfer and world distribution of temperature. The most important topics in chapter ١٥ (*Moisture*) are humidity: water vapor in the air, stability of air, condensation and cloud formation and how precipitation is formed. Chapter ١٦ (*Air Pressure and Wind*) deals with some topics as measuring air pressure, cyclones and

anticyclones, local wind and global distribution of precipitation. Chapter ١٧ (*Weather Patterns and Severe Storms*) discusses the air masses, fronts, the middle-latitude cyclone, thunderstorms, tornadoes and hurricanes, but the important topics in chapter ١٨ (*Climate*) are the climate system, climate classification and human impact on global climate.

The fourth part Astronomy consists of ٤ chapters. Chapter ١٩ (*Earth's Place in the Universe*) deals with some topics as the ancient astronomy, motions of earth and motions of the earth-moon system. Chapter ٢٠ (*Touring Our Solar System*) discusses the planets; an overview, evolution of the planets, earth's moon, the planets; a brief tour and minor members of the solar system. Chapter ٢١ (*Light, Astronomical Observation, and the Sun*) deals with the study of light; astronomical tools and the sun, but chapter ٢٢ (*Beyond Our Solar System*) discusses some topics as properties of stars, variable stars and galaxies.

In general, this book can be considered as one of the important textbooks, which deal with the previous topics.

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