

AMPE03 GEOPHYSICS-I

UNIT-1 THE EARTH AS A PLANET AND INTERNAL STRUCTURE

- 1.1 Principles of measurements and measurement of earth.
- 1.2 Position location techniques on earth's surface.
- 1.3 Geodynamics.
- 1.4 Plate tectonics, its mechanics and continental margins.

UNIT-2 GRAVITATIONAL FORCE AND GRAVITY MEASUREMENT METHODS

- 2.1 Accuracy and correction of gravity date.
- 2.2 Gravity anomalies and their interpretation.
- 2.3 Magnetic field and paleomagnetism.
- 2.4 Magnetic surveys, anomalies and interpretation.

UNIT-3 HEAT GENERATION, FLOW, DISTRIBUTION AND MEASUREMENT

- 3.1 Geothermal exploration and temperature logging.
- 3.2 Electrical properties of rocks.
- 3.3 Electrical survey methods.
- 3.4 Electromagnetic methods.

UNIT-4 EARTHQUAKES, HISTORY, OBSERVATION, NOMENCLATURE

- 4.1 Study of body and surface waves and prediction of earthquakes.
- 4.2 Seismic waves reflection and refraction and their use in data acquisition.
- 4.3 Geometry of Seismic waves, wave theory, diffractions and velocities. Tsunamis.

UNIT-5 LAND OPERATIONS

- 5.1 Marine methods. 3D exploration.
- 5.2 Non-conventional methods- VSP, Shear waves, channel waves.
- 5.3 Seismic data processing.
- 5.4 Attribute analysis and Migration techniques.

Reference Book:

1. The Blue Planet : An introduction to Earth System Science 2nd Edition by Brian J.Skinner