**Introduction: Energy sources (including fossil fuels and nuclear energy), India’s production and reserves of commercial energy sources, need for nonconventional energy sources, energy alternatives, Indian and global energy scenario. Solar Radiation & Measurement: Extra-Terrestrial radiation, spectral distribution of extra-terrestrial radiation, solar constant, solar radiation at the earth’s surface, beam, diffuse and global radiation, solar radiation data. Pyrometer, shading ring Pyrheliometer, sunshine recorder, schematic diagrams, and principle of working, actinometer and bolometer**

1. Explain briefly different renewable and non-renewable energy sources.
2. Justify the statement “Indian economy is depends on energy”.
3. Illustrate the radiation data collection with suitable graphs.
4. Sketch and explain the Pyrheliometer..

**Energy sources (including fossil fuels and nuclear energy)**