

**Detail Syllabus of written test for PhD Admission under Centre for
Advanced Research on Energy (CARE)**

Basic Physics

Semiconductor physics, Solid-state devices, Electronics and Circuits, Basic Thermodynamics, Physical Optics

Non-conventional Energy Sources

Energy Alternatives: The Solar Option, The Nuclear Option, Tar sands and Oil Shale, Bio Energy, Tidal Energy, Geothermal Energy

Solar Energy: Solar Radiation, availability, measurement and estimation, Solar Thermal Conversion Devices and Storage, Applications

Solar Photovoltaic conversion, Wave Energy and Ocean Thermal Energy Conversion, Wind Energy Conversion, Biomass Energy Conversion

Energy from Waste, Mini/Micro-hydel

Energy Resources, Economics & Environment

Overview of World Energy Scenario, Energy Economics, Environmental Impacts of energy use

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