

## **SEMESTER-II (Pool-B)**

### **COURSE NAME : SUSTAINABLE DEVELOPMENT AND CLEAN ENERGY (CHOI-B35)**

**Number of Credit: - 02**

**Maximum marks: 50**

#### **Unit-I**

Sustainable Development – definition of sustainable development, United Nations General Assembly resolution 2015, Agenda 2030, sustainable development goals (SDGs), brief introduction to seventeen SDGs.

#### **Unit-II**

Sustainable Development Goal 7- Affordable and clean energy, importance of energy from social, economic, health and environmental perspectives, need for clean energy for improvement in quality of life in developing countries-educational outcomes, social security, increasing earning potential, better health services, energy security.

#### **Unit-III**

Clean energy for lighting- comparison of energy sources used for lighting applications in developed and developing countries, estimating and comparing carbon emissions from different lighting sources- kerosene lamp, incandescent bulbs and LEDs.

#### **Unit-IV**

Clean energy for cooking- comparison of energy sources used for cooking applications in developed and developing countries, comparing carbon emissions from different cooking fuels- wood, kerosene, coal, LPG, electricity, solar cookers.

#### **Unit-V**

Clean energy for transportation- comparison of energy sources used in transportation in developed and developing countries, comparing carbon emissions from different transportation fuels-diesel, gasoline, natural gas, electricity.

#### **Book References**

1. Renewable Energy: Power for sustainable future, Godfrey Boyle, Oxford University Press, 2004.
2. World Health Organization  
<https://www.who.int/airpollution/ambient/en/>  
<https://www.who.int/health-topics/air-pollution/>
3. IPCC Climate Change 2014, Synthesis Report, Summary for Policymakers
4. The Cost of Air Pollution: Strengthening the Economic Case for Action, World Bank and IHME report 2013
5. Global Carbon atlas <http://www.globalcarbonatlas.org/en/CO2-emissions>

6. Carbon Emissions <https://www.co2.earth/>