

- (viii) Name the sector that benefits the most from the implementation of hybrid renewable energy systems.
- a) Residential
b) Industrial
c) Agricultural
d) Transportation
- (ix) State which of the following is not a pillar of sustainable development.
- a) Environmental sustainability
b) Social equity
c) Economic growth
d) Political dominance
- (x) State which of the following organizations deals with geothermal energy locations in India.
- a) Geological Survey of India
b) Geological Society of India
c) Forestry Department
d) Ministry of external affairs
- (xi) Name the gas that is commonly used as the fuel in hydrogen fuel cells.
- a) Methane
b) Hydrogen
c) Carbon dioxide
d) Nitrogen
- (xii) Select the correct definition of diffused solar radiation.
- a) Sum of direct and reflected radiation energies.
b) Radiation reflected from an obstacle.
c) Radiation traveling on a straight line from sun to earth.
d) Radiation scattered by molecules.
- (xiii) State the main problem in using hydrogen as fuel for vehicles.
- a) Capital intensive
b) Storage
c) Fuel cell technology is not well established
d) Cars will become heavy
- (xiv) State the reason due to which LED bulbs are considered energy-efficient.
- a) Produce more heat than light
b) Use more electricity than traditional bulbs
c) Consume less energy and have a longer lifespan
d) Emit harmful radiation
- (xv) State which action contributes to energy conservation in transportation.
- a) Carpooling
b) Increasing vehicle speed
c) Frequent engine idling
d) Using premium gasoline

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Define energy and classify it. (3)
3. List out the various non-conventional energy sources with one advantage of each. (3)
4. Explain the importance of non-conventional energy sources in context of global warming. (3)
5. Explain the working principle of flat plate solar collector. (3)
6. Explain the construction and working of a concentrating type solar collector. (3)

OR

Explain Photovoltaic Effect.

(3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. State few advantages of tidal energy. (5)
8. The efficiency of a single solar cell (10 cm x 10 cm) is 15.6%, it produces a voltage of 0.5V and the solar insolation is 800 W/m^2 . Calculate the amount of current that flows through the circuit. (5)
9. Explain few applications of renewable energy. (5)
10. State the importance of renewable energy sources in the context of sustainable development. (5)

11. If the diameter of a turbine is 24 m and the wind speed is 6 m/sec. Evaluate the power in the wind considering the density of air to be 1.225 kg/m³. (5)

12. With a neat sketch explain the construction of a flat plate solar collector. (5)

OR

With the help of a diagram show the formation of depletion layer in a PV cell. (5)
