

**N. B.:**

1. Attempt any **FOUR** Questions.
2. Use illustrative diagrams wherever required.

| Q. No. | Marks |
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| Q1) | a) What is the potential of renewable energy sources in India and in the world? Which source is most commonly used?                                | 10 |
|     | b) Enlist the advantages and disadvantages of solar thermal energy conversion.   | 10 |
| Q2) | a) Draw and explain the equivalent circuit of a solar cell.  | 10 |
|     | b) Explain the economics and social considerations in establishing solar power plant.  | 10 |
| Q3) | a) Discuss the different types of wind turbines used to extract wind energy.   | 10 |
|     | b) Discuss various conversion technologies of hydrogen to useful applications.   | 10 |
| Q4) | a) Draw schematic layout of biogas plant. Explain performance evaluation method of biogas plant.   | 10 |
|     | b) Explain any two collectors used in solar thermal power plant.   | 10 |
| Q5) | a) Explain working principle of tidal energy power plant.  | 10 |
|     | b) List various clean development mechanisms carried out in India. Explain any one clean development mechanism in detail.                          | 10 |
| Q6) | Write short note on ANY FOUR.  | 20 |
|     | i) Global climate change ii) Photovoltaic technology iii) Wind energy potential measurement iv) Properties of biomass v) Carbon credits importance |    |