

22549

24225

3 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
  - (2) Answer each next main Question on a new page.
  - (3) Illustrate your answers with neat sketches wherever necessary.
  - (4) Figures to the right indicate full marks.
  - (5) Assume suitable data, if necessary.

**Marks**

**1. Attempt any FIVE of the following :**

**10**

- (a) List any two conventional energy sources.
- (b) Write any four advantages of conventional energy sources.
- (c) State any two applications of biogas plant.
- (d) State significance of Biomedical Waste Management System.
- (e) State any four non-incineration techniques for biomedical waste management.
- (f) State different methods of waste collection.
- (g) Write classification of biomedical waste.

**2. Attempt any THREE of the following :**

**12**

- (a) Compare conventional and non-conventional energy sources (any four points each).
- (b) Draw a neat diagram of biogas plant and explain the process of generation of biogas from biomass.
- (c) State and explain the need of energy conservation.
- (d) Describe in brief environmental pollution due to medical waste with suitable examples.



- 3. Attempt any THREE of the following : 12**
- (a) Draw the block diagram of thermal power plant.
  - (b) Draw PV cell and state the working principle of it.
  - (c) Describe the importance of energy audit.
  - (d) Describe WHO guidelines for management of hospital waste.
- 4. Attempt any THREE of the following : 12**
- (a) Explain hydroelectric power plant with neat sketch.
  - (b) State four types of solar collectors. Explain working of any one type with neat diagram.
  - (c) Suggest the energy audit instrument required for energy audit of hospitals. State function of each instrument.
  - (d) Draw and explain flow chart of Biomedical Waste Management Process.
  - (e) Explain impact of biochemical waste on human health.
- 5. Attempt any TWO of the following : 12**
- (a) Describe the present scenario of energy in Maharashtra with respect to (i) Generation capacity (ii) Energy demand (iii) Renewable energy alternative.
  - (b) Suggest the remedial actions for reduction and disposal of (i) pathological waste (ii) radiological waste.
  - (c) Describe microwave irradiation process and state any two applications of it.
- 6. Attempt any TWO of the following : 12**
- (a) Draw the basic blocks of wind power plant & state the function of each block.
  - (b) State and explain the important features of Electricity Act 2003.
  - (c) Write in detail w.r.t. biomedical waste treatment :
    - (i) Incineration technology
    - (ii) Plasma pyrolysis
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