

22514

22232

3 Hours / 70 Marks

Seat No.

--	--	--	--	--	--	--	--

- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Attempt **All** Questions including Question No. 1 which is compulsory.
 - (3) Answer each next main Question on a new page.
 - (4) Illustrate your answers with neat sketches wherever necessary.
 - (5) Figures to the right indicate full marks.
 - (6) Assume suitable data, if necessary.
 - (7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following :

10

- (a) Name any four sources of biofuel.
- (b) State the principle of hydro power plant.
- (c) Define concept of bioenergy.
- (d) Name any two types of battery used in solar electric system.
- (e) Enlist any four application of solar energy.
- (f) Name any two types of wind turbine.
- (g) Write principle of wind turbine.



2. Attempt any THREE of the following : 12

- (a) Explain construction and working of solar distillation with neat sketch.
- (b) Write merits and demerits of bioenergy from liquid biomass (any four of each).
- (c) Explain construction and working of synthesis of bioenergy from agricultural waste materials.
- (d) Discuss the following wind turbine terminologies :
 - (i) cut-in wind speed (ii) cut-out wind speed
 - (iii) wind power curve (iv) survival wind speed

3. Attempt any THREE of the following : 12

- (a) Explain construction and working of formation of energy from kitchen biomass.
- (b) Write the functions of the following parts :
 - (i) Rotor (ii) Generator
 - (iii) Gear box (iv) Wind vane
- (c) Describe construction and working of micro hydro power plant.
- (d) Explain with neat sketch hybrid wind solar system.

4. Attempt any THREE of the following : 12

- (a) Explain formation of energy from municipal waste.
- (b) Discuss the factors that are considered while selecting the site for a micro hydro power plant.

- (c) Explain drag and lift principle used in wind turbine.
- (d) Enlist the features of roof top solar system.
- (e) Compare biodiesel and conventional diesel. (any four points)

5. Attempt any TWO of the following : 12

- (a) Describe the construction and working of solar water heating system.
- (b) Describe construction and working of wind mill.
- (c) Explain formation of fuel energy from waste plastic.

6. Attempt any TWO of the following : 12

- (a) Explain the construction and working of solar photovoltaic system with heat sketch.
 - (b) Explain routine maintenance of micro hydro power plant.
 - (c) Enlist any six application of wind energy.
-

