22514

12425

3 Hours / 70 Marks Seat No. | | | | | | | | |

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) 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) Write the principle used in wind energy.

(b) Give any two applications of wind energy.

(c) What do you mean by solar energy ?

(d) Name the gases present in biomass.

(e) State any two applications of bio-energy from solid biomass.

(f) Define bio-diesel.

(g) Write concept, application and principle used in bio hydro power plant.

2. Attempt any THREE of the following : **12**

(a) Describe construction and working of wind turbine with a neat sketch.

(b) Explain drag and lift rotation principle used in wind turbine.

(c) Name any four parts of wind turbine and give its functions.

(d) Describe power curve of wind turbine.

3. Attempt any THREE of the following : **12**

(a) Describe the construction and working of solar photovoltaic system.

(b) Explain construction and working of solar distillation with neat sketch.

(c) Explain with neat sketch hybrid wind solar system.

(d) Describe preventive and scheduled maintenance of solar PV lighting system.

4. Attempt any THREE of the following : **12**

(a) Explain construction and working of biogas power from kitchen wastes.

(b) Write the problems for converting municipal solid waste into power.

(c) Explain formation of energy from municipal waste.

(d) Explain construction and working of synthesis of bio energy from agricultural waste.

(e) Differentiate between the bio-energy power plants from agri-based bio-material and municipal waste.

5. Attempt any TWO of the following : **12**

(a) Describe the manufacturing of bio-diesel from Jatropha plant with the chemical reaction involved.

(b) Explain the concept and principle used for preparation of bio energy from liquid biomass.

(c) Give the merits and demerits of bio-energy generation from liquid biomass.

6. Attempt any TWO of the following : **12**

(a) Write the construction, working of high head micro-hydro power plant with labelled diagram.

(b) Explain the routine maintenance of microhydro power plant.

(c) Discuss the factors that are considered while selecting the site for a micro hydro power plant.