

11050 : Elective-II : Renewable Energy Sources : 6 FECT 05

P. Pages : 2

Time : Three Hours



AW - 3265

Max. Marks : 80

- Notes :
1. Answer **three** question From Section A and **three** question from Section B.
 2. Due credit will be given to neatness and adequate dimensions.
 3. Assume suitable data wherever necessary.
 4. Diagrams and Chemical equations should be given wherever necessary.
 5. Illustrate your answer necessary with the help of neat sketches.
 6. Discuss the reaction, mechanism wherever necessary.

SECTION - A

1. a) Give all the details of Radiometer used in measurement of solar radiation. **5**
b) Derive the expression for the actual useful energy gain by flat plate solar collector. **9**

OR

2. a) Give all the technical details of flat plate solar collector with neat sketches. **8**
b) Why concentrating solar collector is more efficient than flat plate solar collector. **3**
c) Describe all losses in flat plate solar collector. **3**
3. a) Give the details of construction of wind mill with neat sketches. **7**
b) How properties of wind and meteorological factors affect power harvesting from wind by wind mill? **6**

OR

4. a) Give details of types of wind mill. **7**
b) Give details of types of blades of wind mill. **6**
5. Describe all thermochemical process in details for the conversion of biomass into bioenergy. **13**

OR

6. Describe the principal of biogas generation, types of biogas plants and their applications. **13**

SECTION - B

7. a) How vehicles can run using fuel cell? Describe with neat sketches. **6**
b) Give the basic principles of electrochemistry behind the fuel cell. What does mean by power density characteristics and fuel stacks in PEM fuel cell. **7**

OR

8. a) Give the biological pathway for the generation of hydrogen from water. **7**
b) Describe at least three types of fuel cell. **6**
9. a) Give the details of ocean wave energy conversion plant. **7**
b) Describe a hot dry rock geothermal resources power plant. **7**

OR

10. a) What are the advantages and disadvantages of ocean thermal energy conversion. **6**
b) Describe the factors affecting the hydropower. **4**
c) Describe the factors affecting the tidal power. **4**
11. a) Give details of efficient energy technology details in India. **6**
b) Describe the factors considered for the commercialization of renewable energy. **7**

OR

12. How can you forecast the states of energy in India. What is the current Scenario of renewable energy in India. **13**
