

10167 : Elective-II : Renewable Energy Sources : 6 FECH 05

P. Pages : 2

Time : Three Hours

**AW - 3250**

Max. Marks : 80

- Notes :
1. Answer **three** question from Section A and **three** question from Section B.
 2. Diagrams and chemical equations should be given wherever necessary.
 3. Illustrate your answer necessary with the help of neat sketches.
 4. Discuss the reaction, mechanism wherever necessary.
 5. Use of pen Blue/Black ink/refill only for writing the answer book.

SECTION - A

1. Explain in detail, with neat sketch, principle of photo voltaic conversion of solar energy. **14**

OR

2. Differentiate between flat & focusing collectors. What do you understand by solar distillation? Explain with neat sketch. **14**
3. a) Describe various safety & environmental aspects of wind power generation system. **7**
b) Differentiate between horizontal axis wind turbine & vertical axis wind turbine. **6**

OR

4. a) What do you understand by wind energy? How do wind form? **7**
b) Define: **6**
i) Betz Law
ii) Wind Shear
iii) Drag force
5. What is biogas? Explain principle, construction and working of biogas plant. Also explain various factors affecting the production of biogas. **13**

OR

6. a) What do you understand by biomass gasification? How are gasifier classified? **7**
b) What are advantages & disadvantages of biomass energy? **6**

SECTION - B

7. a) Explain the electrochemical principle of fuel cell. **7**
b) Explain applications of Hydrogen as fuel source. **6**

OR

8. a) Explain in detail why Hydrogen is a clean & secure fuel. What are the advantages & disadvantages of Hydrogen energy? **7**
- b) Explain principle & working of Hydrogen-oxygen fuel cell with neat sketch. **6**
9. a) Explain the principle of ocean thermal energy conversion with neat sketch. **7**
- b) Explain the advantages & disadvantages of tidal energy. **6**

OR

10. a) What do you understand by geothermal energy? Enlist different geothermal sources. **7**
- b) What is hydro power? How is site selected for it's installation? **6**
11. Explain the economical aspect and correct status of renewable energy sources. **14**

OR

12. What are the pollutants produced during conventional energy conversion? What are remedial actions? **14**
