

B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, MARCH 2015**Sixth Semester****Choice Based Course—RENEWABLE ENERGY TECHNOLOGY****(For Model I and II B.Sc. Physics)**

Time : Three Hours

Maximum Weight : 25

Part A (Objective type questions)*Answer all questions.**Weight 1 for each bunch.***BUNCH I**

1. Which is not a source of renewable energy ?
 - (a) Sun.
 - (b) Wind.
 - (c) Coal.
 - (d) Tides.
2. Solar energy is preferred now a days because :
 - (a) No need of investment.
 - (b) Easily available.
 - (c) No need of Machines.
 - (d) None of these.
3. In solar cells, which effect is used ?
 - (a) Photoelectric effect.
 - (b) Photo voltaic effect.
 - (c) Both (a) and (b).
 - (d) None of these.
4. Wind mills are located near :
 - (a) Mountains.
 - (b) Sea shore.
 - (c) Plains.
 - (d) Both (a) and (b).

BUNCH II

5. Which among the following energy is clean and order free ?
 - (a) Tidal energy.
 - (b) Wind energy.
 - (c) Geothermal energy.
 - (d) All of the above.

Turn over

6. Wind energy conversion uses the principle :
- Self-induction.
 - Mutual Induction.
 - Faraday effect.
 - All of the above.
7. In Solar ponds energy is stored as :
- Nuclear energy.
 - Chemical energy.
 - Thermal energy.
 - Electrical energy.
8. Magma resources are responsible for :
- Biomass energy.
 - Tidal energy.
 - Chemical energy.
 - None of these.
- BUNCH III
9. OTEC means _____.
10. Fuel cell are used for _____ storage.
- Charge.
 - Voltage.
 - Energy.
 - All of the above.
11. Energy stored as thermal energy in the earth's crust is called _____.
12. Biomass and fossil fuels have been generated by _____.
- Biome.
 - Sun.
 - Water.
 - None.
- BUNCH IV
13. Hydrogen energy uses the principles of :
- Electrolysis.
 - Photoelectric effect.
 - Nuclear Fusion.
 - None.
14. In Fuel cells most expected parameter is :
- Conversion efficiency.
 - Principle of working.
 - Design.
 - Coast.
15. India produce wind energy per year of about :
- 4650 MW.
 - 14650 MW.
 - 24650 MW.
 - 46200 MW.

16. Which among the following is the cost effective energy conversion under renewable energy technology ?
- Tidal.
 - Wind.
 - Solar.
 - Biomass.
- (4 × 1 = 4)

Part B (Short Answer Questions)

Answer any five questions.

Weight 1 each.

- What is the role of renewable energy sources in modern era ?
 - What is the use of selective absorber coatings in solar cells ?
 - Give the types of wind machines.
 - What are the disadvantages of Geothermal energy ?
 - Name few methods of getting energy from Biomass.
 - What is the principle of tidal power plant ?
 - What are the applications of fuel cells ?
 - Give the significance of Hydrogen energy.
- (5 × 1 = 5)

Part C (Short Essay / Problem)

Answer any four questions.

Weight 2 each.

- Write briefly about new energy technologies.
 - Discuss briefly solar electric power generation.
 - With a neat sketch explain the basic working principle of wind machine.
 - Write briefly about the operational and environmental problem with regards to geothermal energy.
 - Explain how single cycle and double cycle system extracts energy from tides ?
 - Write a note on problems regarding usage of hydrogen as a fuel in motor vehicles.
- (4 × 2 = 8)

Part D (Essays)

Answer any two questions.

Weight 4 each.

31. Discuss in detail about the different type of collectors used for solar energy conversion.
32. Describe about various geothermal resources and how they are explored, what are there relative merits?
33. With necessary sketch explain the production of hydrogen energy and also discuss about its storage.

(2 × 4 = 8)