

UNIVERSITY DEPARTMENT OF PHYSICS
DR. SHYAMA PRASAD MUKHERJEE UNIVERSITY, RANCHI
B.SC. PHYSICS (HONS.)
SEMESTER - IV
PAPER – SEC II:
RENEWABLE ENERGY AND ENERGY HARVESTING

MODEL QUESTIONS

GROUP A

Short Answer Type Questions

1. Explain the importance of geothermal energy taking its present day scenario as point of reference. Brief the working of the different kinds of geothermal power plants.
2. What are piezoelectric parameters? Write about piezoelectric energy harvesting applications.
3. What are the renewable sources of energy? Compare between conventional and non-conventional energy sources.
4. What is hydro energy? What are some environmental impact of hydro power sources?
5. Explain the construction and working of biogas plant.
6. What according to you are the major challenges in adopting solar power as a house hold power source? Explain the working of a solar cell.

GROUP B

Long Answer Type Questions

1. What are hydropower resources? Write in brief the importance of environmental impact of hydropower sources.
2. Classify water turbines in detail and explain the working principle of any two kind of wind turbines.
3. Briefly explain working mechanism of wind turbines and also write about different electrical machines used in wind turbines.
4. What are the importance and limitations of fossil fuels and nuclear energy? Explain the differences between wind, tidal, wave energy systems. Is biogas could be beneficial in supporting today's need?
5. Describe tide characteristics and statistics. Write short note on tide energy technologies.
6. Describe ocean thermal energy. Mention wave characteristics, tide characteristics and explain their statistics. How ocean biomass can be used to meet energy requirements?
7. What is piezoelectric effect? Explain the characteristics of piezoelectric effect in detail by giving mathematical description. What are its harvesting applications?
8. Explain in detail about (a) solar water heater (b) solar distillation (c) solar greenhouses (d) solar cell (e) solar pond.