

GUJARATI UNIVERSITY, AHMEDABAD
QUESTION BANK
SUBJECT: ALTERNATE ENERGY SOURCES, B.E. SEM-VIII, MECHANICAL

Note: Each question carry 08 Marks.

1. Write any four differences between renewable and non-renewable sources of energy.
2. List the different alternate sources of energy and explain any three of them briefly.
3. Define 1). Global Radiation, 2). Beam Radiation, 3). Diffuse Radiation
4. What are the main components of a flat plate solar collector? Explain the function of each component briefly.
5. Give classification of solar collectors.
6. Describe working of a simple solar water heater with necessary figure.
7. Write advantages and disadvantages of solar PV system.
8. Explain construction of box type solar cooker with figure.
9. Write and explain wind power equation with usual annotations.
10. Write advantages and disadvantages of wind power.
11. Explain working of Horizontal axis wind mill with figure.
12. Explain with neat sketch, the methods of operation of tidal power generation.
13. Explain with neat sketches, the operation of a geothermal power plant.
14. Write advantages and disadvantages of tidal power.
15. Write advantages and disadvantages of Geothermal energy.
16. Describe the factors affecting for site selection of tidal power plant.
17. Explain factors affecting to the photosynthesis process of plants.
18. Describe the single basin arrangement in tidal power generation.
19. Explain open cycle of OTEC power plant with figure.
20. Describe working of a gasifier with figure.
21. Explain construction of fixed dome type biogas plant with figure.
22. Explain working of floating dome type biogas plant with figure.
23. Explain solar PV system for water pumping with figure.

24. Define 1). Solar Altitude angle, 2). Solar Zenith angle 3). Solar Azimuth angle
25. Explain different types of tracking systems for solar concentrators.
26. Write short note on Compound Parabolic Concentrator with figure.
27. Explain construction and working of Savonius wind mill with figure.
28. Describe construction and working of Sun Shine recorder with figure.
29. Write short note on Pyranometer used for solar energy measurement.
30. Describe construction and working of Solar Pond with figure.
31. Write advantages of vertical axis wind mill as compared to horizontal axis wind mill.
32. Describe the factors affecting on site selection to install the biogas plant.
33. Define sunrise and sunset angles. Derive equation for day length from it.
34. Explain typical wave energy conversion system with figure.
35. Describe need of energy audit and management.
36. Describe theory of photovoltaic conversion of solar energy.
37. Explain principle of Magneto Hydro Dynamic with figure.
38. Explain anaerobic digestion of biomass for biogas generation.
39. Write about factors affecting on biogas generation of a biogas plant.
40. Describe the properties of biogas generated in biogas plant.