

**6640**  
**BOARD DIPLOMA EXAMINATION**  
**MARCH/APRIL - 2019**  
**DIPLOMA IN MECHANICAL ENGINEERING**  
**ENERGY SOURCES & POWER PLANT ENGINEERING**  
**FIFTH SEMESTER EXAMINATION**

**Time: 3 Hours**

**Total Marks: 80**

**PART - A (3m x 10 = 30m)**

*Note 1: Answer all questions and each question carries 3 marks*

*2: Answers should be brief and straight to the point and shall not exceed 5 simple sentences*

1. What is Geo thermal energy?
2. Write any three advantages of solar energy
3. State the principle of conversion of solar radiation into heat
4. Define tip speed ratio of wind mill
5. State the working principle of fuel cell
6. List different processes for the conversion of biomass
7. Write the advantages of tidal power plant
8. Write any three advantages of steam jet system of ash handling
9. Write the need of feed water treatment
10. Write any three disadvantages of nuclear power plants

**PART - B (10m x 5 = 50m)**

*Note 1: Answer any five questions and each carries 10 marks*

*\* 2: The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer*

11. Explain the construction details and working of forced circulation solar water heater
12. Explain the working of air flat plate collector with a neat sketch
13. With a neat sketch explain how windmill can be used to generate electricity?
14. Draw a simple sketch of an MHD generator and explain its working
15. Explain the bio-mass energy production technologies

16. Draw the layout of a tidal power plant and explain its major components
17. Explain demineralisation method of water treatment
18. Explain the working of PWR with a neat sketch.

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