

**INDIAN MARITIME UNIVERSITY**  
(A Central University, Government of India)  
**End Semester Examination Dec 2019/Jan 2020**  
**B.Tech (Marine Engineering)**  
**Semester- VIII/VII**

**UG11E1804/E2704- Renewable Energy Sources and Applications**

**Date: 20.12.2019**

**Max Marks: 70**

**Time: 3 Hours**

**Pass Marks: 35**

**Part – A (compulsory)**

**Answer the following (10x2=20 Marks)**

1. What do you understand by total radiation?
2. List out the disadvantages of conventional energy.
3. What are the forms of silicon used in PV cell?
4. Write down the characteristics of wind.
5. What do you understand by tide?
6. Write down the disadvantages of geo thermal energy.
7. Name the types of bio mass conversation.
8. Write short notes on bio fuel.
9. Write short notes on fuel cell
10. Write short notes on solar thermal pond.

**Part – B**

**Answer any 5 out of 7 questions (5 x 10= 50 marks)**

11. Draw and explain the forced circulation water heating system. (10 marks)
12. a) Write about the Advantages and disadvantages of using Solar Power in Practical Applications. (5 marks)  
b) Write short notes on concentrating type collectors. (5 marks)
13. Draw and explain a standalone power supply system (10 marks)
14. Explain horizontal and vertical axis wind turbine with diagram? (10 marks)
15. Draw and explain any one of tidal energy conversion system (10 marks)
16. Draw a block diagram of closed cycle ocean thermal conversion system and explain. (10 marks)
17. Write short notes on the following: (10 marks)
  - a) Energy farming
  - b) Ethanol production.

\*\*\*\*\*