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BOARD DIPLOMA EXAMINATION, (C–14)

OCT/NOV—2017

DME—SIXTH SEMESTER EXAMINATION

ENERGY SOURCES AND POWER PLANT ENGINEERING

Time : 3 hours] [*Total Marks* : 80

PART—A 3×10=30

Instructions : (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. List out various sources of renewable energy.

2. Define solar energy. What are the main applications of solar energy? 2+1=3

3. What is the principle of photovoltaic cell?

4. What is the working principle of aluminium-air fuel cell?

5. List out the material used for biogas generation.

6. Discuss the factors to be considered for selection of site for tidal power plant.

7. What are the basic requirements of ash handling system?

8. Distinguish between surface condenser and jet condenser.

9. Define vacuum efficiency and condenser efficiency.

10. What is greenhouse effect?

PART—B

10×5=50

Instructions : (1) Answer *any* **five** questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Explain the solar absorption system with the help of a neat sketch. 6+4=10

12. Explain, with sketch, the working of a horizontal axis windmill. 4+6=10

13. Explain the working of MHD generator with simple sketch. 6+4=10

14. Explain, with a neat sketch, the construction and working of float-type biogas digester. 6+4=10

15. Draw the layout of a tidal power plant and explain its major components. 4+6=10

16. Draw a neat sketch of PWR power plant and explain its working. 4+6=10

17. In a condenser vacuum is 715 mm of Hg when the barometer reads 765 mm of Hg. The inlet temperature of cooling water is 15 °C and outlet temperature of water is 25 °C. Determine the condenser efficiency. 10

18. Write short notes on the following : 5+5=10

(a) Automobile norms

(b) Global warming

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