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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. Write down the different types of non-conventional energies.

2. State the advantages and limitations of wind energy. 1½+1½=3

3. Define solar energy and write any two applications of solar energy. 1+2=3

4. What are the advantages of MHD generators?

5. List out the different types of bio gas plants.

6. What is a tide and how they are formed? 1+2=3

7. State any three desired properties of coolants used in nuclear reactor.

8. Explain nuclear fission reaction.

9. Define vacuum efficiency and condenser efficiency.

10. Write down the effects of thermal pollution on environment.

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 following with neat sketches : 5+5=10

(a) Electrical power generation using wind mill

(b) Basic components of wind mill

12. Explain the solar water pumping system with a neat sketch. 5+5=10

13. *(a)* Explain the working principle of aluminium-air fuel cell. 6

(b) State the applications of fuel cell. 4

14. Explain the construction and working principle of fixed dome biogas digester with a neat sketch.

15. State different operation methods of utilization of tidal energy and explain them.

16. Draw a layout of thermal power plant and explain the functions of major components.

17. Draw a neat sketch of PWR power plant and describe its operation.

18. Explain various methods of nuclear waste disposal.

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