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BOARD DIPLOMA EXAMINATION, (C-16)

AUGUST/SEPTEMBER—2021

DME - FIFTH 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. Differentiate between renewable and non-renewable sources of energy.

2. Name the different methods of storing solar energy.

3. What is solar collector? List out different types of solar collectors.

4. What are the different considerations for site selection for installing windmill?

5. What are the different types of fuels used in fuel cells?

6. Write the composition and calorific value of biogas.

7. What are the advantages and disadvantages of tidal power plant?

8. What is a condenser. State its function in a power plant.

9. List out different types of dust collectors.

10. Define nuclear fission and fusion.

PART—B

10×5=50

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

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

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

11. Explain the working principle of natural circulation solar water heater.

12. Explain photovoltaic cell for power generation.

13. Explain the constructional details and working principle of vertical axis windmill.

14. Explain working of magnetohydrodynamic generator with a neat sketch.

15. Illustrate the constructional details and working of floating type biogas plant.

16. Explain operation methods of utilization of tidal energy.

17. Explain the dust extraction in electrostatic precipitator with a neat sketch.

18. Describe the working principle of PWR power plant with a neat sketch.

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