C16–M–504

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BOARD DIPLOMA EXAMINATION, (C–16)

NOVEMBER—2020

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. State the necessity of alternate sources of energy.

2. State the applications of solar air heater.

3. List out the solar energy storage methods.

4. What are the basic components of a windmill?

5. What are the advantages of MHD generators?

6. What are the factors to be considered for selection of site for biogas plants?

7. Write working principle of tidal power plant.

8. Define vacuum efficiency and condenser efficiency.

9. State the principle of electrostatic dust collector.

10. Write any three properties of control rod materials.

PART—B

10×5=50

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

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

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

11. Explain the solar absorption refrigeration system with the help of a neat sketch.

12. List out solar radiation measuring instruments and explain each with neat sketches.

13. Explain the working of horizontal axis windmill with a neat sketch.

14. Illustrate the construction details and working principle of Bacan's high pressure fuel cell.

15. List out the different types of biogas plants and explain any one with a neat sketch.

16. Draw the layout of tidal power plant and explain each component briefly.

17. Explain the factors to be considered for selection of site for steam power plant.

18. Draw and explain liquid metal-cooled reactor power plant.

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