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BOARD DIPLOMA EXAMINATION, (C–09)

MARCH/APRIL—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) Answer should be brief and straight to the point and shall not exceed *five* simple sentences.

1. What is the need of 'renewable energy sources'?

2. Define the term 'solar constant'.

3. List out the advantages and limitations of 'wind energy'.

4. List out any three types of fuel cell.

5. What are the advantages of bioenergy?

6. What are various materials used for biogas generation?

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

8. List out various types of 'dust collectors'.

9. What are the advantages of nuclear power plants?

10. What are the desired 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 criterion for valuation is the content but not the length of the answer.

11. Explain the working of solar air heater with a neat sketch.

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

13. Explain the working of MHD generator with a neat sketch.

14. *(a)* List out different types of biogas plants.

(b) Explain the method of starting of biogas plant. 5+5=10

15. Draw a layout of a tidal power plant and explain its major components.

16. Explain any two types of coal handling equipments with neat sketches.

17. Explain the working of PWR power plant with a line diagram.

18. *(a)* Write a short note on 'solar still'.

(b) What are the differences between jet condensers and surface condensers? 5+5=10

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