



C14-M-603

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**BOARD DIPLOMA EXAMINATION, (C-14)
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) 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. 3
2. What is solar collector? How are they classified? 1+2
3. List out the advantages and disadvantages of wind energy. 1½+1½
4. List out the various types of fuel cells. 3
5. What are biomass and biogas? 1½+1½
6. List out the main components of tidal power plants. 3
7. What are the major elements of steam condensing plant? 3
8. Mention the functions of coolants in nuclear power plant and list out the various coolants used in nuclear power plant. 1½+1½

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9. Write any three ^{*} differences between thermal power plant and nuclear power plant.
10. Write a short note on environment pollution.

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 the following with neat sketches : 5+5
(a) Solar drier
(b) Wind turbine
12. Describe the working of natural circulation solar water heater with a neat sketch. 10
13. Explain the construction and working of fixed dome biogas digester with a neat sketch. 10
14. (a) What are the various factors considered for selecting suitable site for tidal power plants? 6
(b) List out the advantages and disadvantages of tidal power. 4
15. (a) Explain the working principle of aluminium air-fuel cell with a neat sketch. 7
(b) State the advantages and disadvantages of fuel cells. 3
16. Describe the operation of PWR power plant with a neat sketch. 10
17. Explain the dust extraction in electrostatic precipitator with a neat sketch.
18. What is a pollutant? How are they classified? Explain their effects on environment. 2+4+4
