



C14-M-603

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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.  $1\frac{1}{2}+1\frac{1}{2}=3$
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.

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1

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[www.ManaResults.co.in](http://www.ManaResults.co.in)

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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