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**7458**

**BOARD DIPLOMA EXAMINATION, (C-20)**

**NOVEMBER/DECEMBER—2022**

**DME – FOURTH SEMESTER EXAMINATION**

**ENERGY SOURCES & POWER PLANT ENGINEERING**

*Time : 3 hours ]*

*[ Total Marks : 80*

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**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. List out different types of non-conventional source of energy.
2. Write a short note on solar energy.
3. Differentiate between renewable and non-renewable sources of energy.
4. State the advantages and disadvantages of solar energy.
- \* 5. Write the classification of wind mills.
6. What is fuel cell? How are they classified?
7. Name the different types of biogas plants.
8. What is a tidal energy?
9. Write the purpose of economizer and air pre heater.
10. List the characteristics of atomic power plant.

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**PART—B**

8×5=40

- Instructions :** (1) Answer either **(a)** or **(b)** from each question.  
(2) Each question carries **eight** marks.  
(3) Answers should be comprehensive and the criteria for valuation are the content but not the length of the answer.

**11.** (a) Explain the working principle of solar pond with a neat sketch.

**( OR )**

(b) Explain the components of wind mill.

**12.** (a) Explain the construction and working of solar cell with a neat sketch.

**( OR )**

(b) Explain the construction details and working of horizontal axis wind mill with a neat sketch.

**13.** (a) Explain the principle of Bacon's high pressure fuel cell with a line diagram.

**( OR )**

(b) Explain the working of an MHD generator with a neat sketch.

**14.** (a) Explain the construction and working of float type biogas digaster with a legible sketch.

**( OR )**

(b) Explain the components of tidal power plant.

**15.** (a) Describe the coal handling system with flow diagram.

**( OR )**

(b) Describe the construction and working of boiler-water reactor with neat sketch.

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[ Contd...

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**PART—C**

10×1=10

- Instructions :** (1) Answer the following question.  
(2) The question carries **ten** marks.  
(3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

**16.** State the principle of biogas generation. Explain the construction details of fixed dome type biogas plant with a neat sketch.

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