

M.Sc. (Physics) (NEP Pattern) Semester-I  
**NEP-236-3 / 01MSCPH4.3 - (DSE-3) Paper-IV - Energy Physics**

P. Pages : 2

Time : Three Hours



**GUG/S/25/15139**

Max. Marks : 80

**Either:**

1. a) Explain in details the types of energy sources. 8
- b) What are world energy futures. 8

**OR**

- e) What are the energy sources and their availability. 8
- f) Explain in details renewable energy and what are the different types of renewable energy? 8

**Either:**

2. a) Explain the principle and working of a single crystal silicon solar cell. 8
- b) Explain the principle and working of polycrystalline silicon solar cell. 8

**OR**

- e) Define efficiency of a solar cell and explain the factors that affect them. 8
- f) Explain in details cadmium sulphide solar cell. 8

**Either:**

3. a) Explain construction and working of solar photo voltaics. 8
- b) Briefly explain the principle and construction of solar distillation. 8

**OR**

- e) Explain the solar green house and solar cooking. 8
- f) Explain the terms: 8
  - i) Solar pumping
  - ii) Solar furnace

**Either:**

- |           |    |  |          |
|-----------|----|--|----------|
| <b>4.</b> | a) | Explain with a neat diagram the working of various types of wind generators. | <b>8</b> |
|           | b) | Discuss advantages and disadvantages of wind energy.                         | <b>8</b> |

**OR**

- |           |                             |   |          |
|-----------|-----------------------------|---|----------|
|           | e)                          | Explain the working principle of generating electricity by using wind energy. | <b>8</b> |
|           | f)                          | What is wind energy? Give the various application of wind energy.             | <b>8</b> |
| <b>5.</b> | Attempt all the followings: |   |          |
|           | a)                          | Difference between renewable and non-renewable resources of energy.           | <b>4</b> |
|           | b)                          | Explain solar cell parameter in detail.                                       | <b>4</b> |
|           | c)                          | Explain solar water heating.  | <b>4</b> |
|           | d)                          | What range of wind speed is considered favorable for wind power generation?   | <b>4</b> |

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