

17676

16172

3 Hours / 100 Marks

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.
(2) Answer each next main Question on a new page.
(3) Figures to the right indicate full marks.
(4) Assume suitable data, if necessary.
(5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

- 1. Attempt any FIVE of the following: **20****
- What do you mean by Renewable source of Energy and give its examples.
 - State the need of alternate energy sources.
 - Define following:
 - Solar Azimuth angle
 - Zenith angle
 - Explain the construction of working of flat plate collector.
 - Explain solar drying for foots in agriculture.
 - State any two advantages and disadvantages of solar energy.
 - State the principle of solar energy conversion into heat and electricity.

P.T.O.

- 2. Attempt any FOUR of the following:** **16**
- a) What are the major sources of energy? Explain any one of them.
 - b) Explain in detail primary and secondary energy sources.
 - c) Write a short note on Green house effect.
 - d) Describe photovoltaic electric conversion.
 - e) Explain the process of Aerobic and Anaerobic conversion.
 - f) Explain the processor production of ethanol from Biomass.
- 3. Attempt any FOUR of the following:** **16**
- a) Explain the working of floating gas holder biogas plant with neat sketch.
 - b) Define Bio fuel of give the classification.
 - c) Differentiate between vertical axis wind mill and horizontal axis wind mill.
 - d) List the various substances used to produce biogas.
 - e) State the various applications of biogas.
 - f) State any four advantages of wind energy.
- 4. Attempt any FOUR of the following:** **16**
- a) State the methods of obtaining energy from biomass. Explain any one.
 - b) Explain the working of gasifier with neat sketch.
 - c) Write community biogas operated engine and their uses.
 - d) State the factors to be considered for selecting the site for wind mill.
 - e) What are the major applications of geothermal energy?
 - f) Explain various types of geothermal resources.

- 5. Attempt any FOUR of the following:** **16**
- a) What is the basic principle of wind energy conversion?
 - b) Explain working of horizontal axis wind mill with neat sketch.
 - c) Describe the aspect to be considered in design of wind turbine of wind mill.
 - d) What do you understand by geothermal energy? What are geothermal fields?
 - e) What are the different methods for hydrogen production? Explain in brief.
 - f) Describe various methods of hydrogen storage.
- 6. Attempt any FOUR of the following:** **16**
- a) Write merit and demerits of geothermal energy.
 - b) Give status of mini and micro hydal plants in India.
 - c) Define fuel cell and state its main advantages.
 - d) State the potential of Nuclear Energy in India.
 - e) What are the International Nuclear Energy policies and Regulation?
 - f) What is electrolysis and How it can be achieved?
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