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MRW-004

**MASTER OF SCIENCE (RENEWABLE
ENERGY AND ENVIRONMENT)
(MSCRWEE)**

Term-End Examination

June, 2024

MRW-004 : ENERGY MANAGEMENT

Time : 3 Hours

Maximum Marks : 70

Note : (i) *Attempt any five questions.*

(ii) *All questions carry equal marks.*

1. (a) Define the concept and purpose of energy audit. 7
- (b) Discuss the information to be collected during detailed energy audit of a steel plant. 7
2. (a) Explain the purpose of lowering the temperature by evaporation. 7

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- (b) Describe the term 'Boundary' and 'Control volume' in terms of thermodynamic system. 7
3. (a) Explain the thermodynamic state, properties and process ? explain in detail. 7
- (b) Discuss the Kelvin-Planck statement and Clausius statement of second law of thermodynamics. 7
4. (a) With the help of suitable examples, explain close system and open system for flow ? 7
- (b) Explain the principle and feasibility of waste heat recovery. Discuss its feasibility. 7
5. (a) Describe any two of the following : 7
- (i) Passive air pre-heaters
- (ii) Rotary Regenerators
- (iii) Load Pre-heating
- (b) How does a co-generation plant work ? Discuss in detail. 7
6. (a) Describe the working principle of a DC generator with neat sketch. 7

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(b) Differentiate between the following : 7

(i) Energy consumption and specific energy consumption.

(ii) Active power and reactive power

7. Write short notes on any *two* of the following :

7+7

(a) Applications of transformers

(b) Switch gear and its components

(c) Micro grids

(d) Energy