

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

Term-End Examination

December, 2024

MRW-004 : ENERGY MANAGEMENT

Time : 3 Hours

Maximum Marks : 70

Note : Attempt any *five* questions. All questions carry equal marks. Use of Scientific calculator is permitted.

1. (a) Write down all the costs components of an energy consuming unit. 7
- (b) Explain the principle of evaporative cooling. Discuss the advantages of evaporative coolers over air conditioners. 7
2. (a) Discuss the good housekeeping measures in detail. List any *seven* good house keeping measures. 7

- (b) How does thermodynamics differ from mechanics ? Discuss the applications of thermodynamics in different areas. 7
3. (a) Describe the thermodynamic equilibrium and derive the equation of state for adiabatic process. 7
- (b) Discuss the second law of thermodynamics. What is entropy transfer ? 7
4. (a) Define the various types of efficiencies, loss of energy and irreversibility. 7
- (b) Explain the concept of waste heat recovery. Discuss in detail with a neat sketch. 7
5. (a) Describe any *two* of the following : 7
- (i) Waste heat boilers
 - (ii) Plate heat exchanger
 - (iii) Thermocouples
- (b) Explain how co-generation is advantageous over conventional power plants. 7
6. (a) Discuss the various methods of earthing. 7

[3]

- (b) Describe the transmission and distribution system. 7

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

7+7

- (i) Payback period
- (ii) Step up motors
- (iii) Energy efficient devices
- (iv) Star and delta connection

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