

No. of Printed Pages : 2

MRW-006

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

Term-End Examination

December, 2025

**MRW-006 : BIOENERGY CONVERSION AND
ITS UTILIZATION**

Time : 3 Hours

Maximum Marks : 70

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

(ii) *All questions carry equal marks.*

1. Describe the physical and biological properties of municipal solid waste. 10
2. Discuss various measures to mitigate environmental effects due to incineration. 10
3. Explain the significance of deconstruction and fractionation in detail. 10

[2]

4. Distinguish between the following : 5+5
(a) Absorption and Adsorption
(b) Pyrolysis and Combustion
5. Discuss the status of any *two* biofuel technologies that are sustainable. 10
6. Explain any *five* process parameters that affect the production of biogas. 10
7. Describe in detail the process of methanol production. 10
8. Explain the strategy of Green Hydrogen Mission in detail. 10
9. Write short notes on any *four* of the following : $4 \times 2\frac{1}{2} = 10$
(a) Biomass assessment techniques
(b) Properties of ethanol
(c) Steam reforming process of hydrogen production
(d) Utilization of butanol in SI engine
(e) Bioreactors
(f) Dome-shaped biogas plants

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