

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

Term-End Examination

June, 2026

**MRW-006 : BIO-ENERGY CONVERSION AND
ITS UTILIZATION**

Time : 3 Hours

Maximum Marks : 70

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

(ii) All questions carry equal marks.

Section—A

1. Distinguish between the following :

5 + 5

(a) Composting and Digestion

(b) Fibrous and Globular proteins

2. Discuss in detail the significance of waste minimization. 10

3. Explain in detail the hydrothermal liquification process of biomass. 10

4. Describe PSA and membrane separation process in brief. 10

Section—B

5. What are the various issues that restrict the utilization of biofuels ? How can we promote the usage of biofuels ? 10
6. Describe the construction of Fixed dome biogas digestors with the help of a neat sketch. 10
7. Describe the Polymeric Membrane Electrolysis (PEM) process of hydrogen production. 10
8. Explain in detail why is ethanol utilized in SI engine. Also discuss why blending of ethanol with petrol is essential. 10
9. Write short notes on any *four* of the following : $4 \times 2.5 = 10$
 - (a) Selection of Landfill sites
 - (b) Improved cook stoves
 - (c) Waste to energy program of India
 - (d) Nucleic acids
 - (e) Fluidized bed gasifier
 - (f) Biodiesel

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