

**B. SC. (APPLIED SCIENCE—
ENERGY) (BSCAEY)**

Term-End Examination

December, 2025

BEY-006 : BIOENERGY

Time : 3 Hours

Maximum Marks : 70

Note : Attempt any *five* questions. All questions carry equal marks.

1. (a) Explain any *two* thermochemical biomass conversion processes in detail. 7
- (b) Discuss the regulatory framework of solid waste management. 7
2. Discuss the various elements of assessment of biomass with the help of suitable examples. 14

3. (a) Describe the key stages in biomass supply chain. 7
- (b) How can biomass contribute to a circular bioeconomy ? Explain with suitable example. 7
4. Distinguish between any *four* of the following : $4 \times 3.5 = 14$
- (a) Flocculants and Coagulants
- (b) Proximate and Ultimate analysis
- (c) Transesterification and Esterification
- (d) Hydrolysis and Hydrogenation
- (e) Methanol and Butanol
5. (a) Discuss the role of biofuels in transportation sector. 7
- (b) Describe the significance of algae in the production of advanced biofuels. 7
6. (a) Describe the benefits and applications of pyrolysis process. 7
- (b) Define combustion. Discuss various characteristics of biomass which helps in complete combustion. 7

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7. Write short notes on any *four* of the following : 4×3.5=14

- (a) Hazardous waste
- (b) Production of syn-gas
- (c) FT Diesel
- (d) Solid waste treatment
- (e) Limitations of biomass liquefaction

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