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BEY–006

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

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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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