B. Tech.
(SEM. VIII) EXAMINATION, 2006-07
BIOCONVERSION

Time : 3 Hours] [Total Marks : 100

Note : Attempt all questions. All questions carry equal marks.

1. Attempt any two parts of the following : 2×10 = 20
   (a) Discuss shortly about the primary productivity of photosynthesis in nature.
   (b) Discuss about the future prospect of biomass in India with suitable examples.
   (c) Briefly discuss about the production of biohydrogen by photosynthetic bacteria and its applications.

2. Attempt any two parts of the following : 2×10 = 20
   (a) Write down the various microbial and plant biomass resources with examples in India.
   (b) Write down the major chemical components of plant, microbial and agricultural crops with examples.
   (c) Mention atleast five examples of biomass utilization for useful products as feed and food in India.
3. Attempt any two parts of the following: \(2 \times 10 = 20\)
   (a) What are the various biomass (raw materials) used for alcohol production? Discuss about the pretreatment of these biomass and production of alcohol.
   (b) Write down the various factors affecting biogas (methane) production and also mention the advantages of biogas production.
   (c) Write down at least two examples of products each of the various bioconversion systems.

4. Attempt any two parts of the following: \(2 \times 10 = 20\)
   (a) Describe shortly about the commercial scale cultivation of an important edible fungus on agricultural waste biomass along with its advantages.
   (b) Discuss about the biomass refining process and its environmental impact.
   (c) Briefly indicate the various conversion processes of biomass with examples and their mode of uses.

5. Attempt any two parts of the following: \(2 \times 10 = 20\)
   (a) Briefly discuss about the harvesting, processing and utilization of water hyacinths and its role in water pollution control.
   (b) Briefly describe the sources of bio-catalysts and techniques for biotransformation with examples.
   (c) Discuss about the morphology, characteristics and growth of algae and also its role in water pollution control.

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