

**CARMEL COLLEGE OF ARTS, SCIENCE AND COMMERCE, NUVEM – GOA**

**POST GRADUATE DEGREE STUDIES (AFFILIATED TO GOA UNIVERSITY)**

**M.Sc. (I) Food Technology (Semester II) Semester End Examination JULY 2021**

**FTC 201 FOOD BIOTECHNOLOGY AND INDUSTRIAL FOOD WASTE MANAGEMENT**

**Max. Marks: 45 marks**

**Duration: 2 hours**

**Date: 26/07/2021**

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**INSTRUCTIONS:**

- 1. Section I** is compulsory.
- Answer **any 3** questions from **Section II**.
- Figures on the right indicate maximum marks assigned to the question.

**SECTION I**

**Q 1. State the significance of any 6 of the following:**

**6 marks**

- a. RNA interference
- b. Selectable markers
- c. Nucleic acid probes
- d. COD/BOD ratio of waste water
- e. Bioinformatics
- f. Bacterial conjugation
- g. Landfill gas

**Q 2. Comment on any 3 of the following statements:**

**9 marks**

- a. Introducing golden rice will save millions of people from the consequences of vitamin A deficiency.
- b. Macrophytes and microphytes play an important role in waste water management.
- c. Mortality is associated with all animal cell cultures unless it is an immortal cell line or cancer cell line.
- d. Microbial consortia have many characteristics that are desirable for biomass production.
- e. Production of solvents from organic waste.

## SECTION II

Q 3. Write short notes on the following: **10 marks**

- a. Management and utilization of waste generated from breweries and distilleries.
- b. The role of different mutagens with suitable examples.

Q 4. Diagrammatically/schematically explain: **10 marks**

- a. Production of a glyphosate-resistant transgenic crop by rDNA technology.
- b. Working of a biogas plant and production of biogas.

Q 5. Explain the following with emphasis on the mechanisms used: **10 marks**

- a. The role of microorganisms in mineral beneficiation and recovery.
- b. The role of plants in bioremediation.

Q 6. Describe the two major modes of transcriptional regulation that function in bacteria to control the expression of operons. **10 marks**

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